TETRA TECH

January 31, 2021

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SUBJECT: 2021 Annual Progress Report
General Electric Facility
Lancaster, Pennsylvania
EPA ID No. PAD 003026903

Dear Kelly Kinkaid /Linda Matyskiela:

Enclosed for your use is one (1) copy of the above-referenced report and certification. This document has been modified, updated and prepared to fulfill the requirements set forth in 40CFR264.100(g) for a written report describing the effectiveness of the abatement program. This report has been prepared in accordance with the Consent Order and Agreement dated May 30, 2008.

If you have any comments or questions regarding this project, please contact me at (215)-648-3951.

Very truly yours,

John C. McCall, PE
Project Manager

Enclosure

cc: Kevin Mooney – General Electric Company (electronic copy)
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Pennsylvania Certification

Submission: 2021 Annual Report Groundwater Recovery and Treatment System, USEPA I.D. No. PAD 003026903, General Electric Company, Lancaster Facility, PA

Submitted: January 31, 2022

25 PA Code 265.443(3)

This submission is certified pursuant to 25 PA Code 265.443(3) and the certification is made subject to the statutory provisions of P.L. 380, No. 97.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Date: January 31, 2022

Kevin Mooney
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2021 Annual Progress Report
Lancaster Facility
Lancaster, Pennsylvania
United States

USEPA ID No. PAD 003026903

January 31, 2022

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TETRA TECH

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1.0 INTRODUCTION

Tetra Tech, Inc. executed the semiannual groundwater sampling program in October 2021 at the General Electric (GE) Lancaster Facility (USEPA ID No. PAD 003026903) in Lancaster, Pennsylvania (**Figure 1**). In addition to the semiannual groundwater sampling, this report contains the results of residential well sampling conducted on July 28, October 6, November 23, and December 16, 2021. And, this also includes the results of quarterly plant performance sampling conducted August 12 and October 20, 2021. Sampling program was conducted according to the December 2010 Sampling and Analysis Plan (SAP) by O'Brien and Gere.

The sampling program is conducted in accordance with the U.S. Environmental Protection Agency (USEPA)-approved "Corrective Measures Implementation Program Plan for the General Electric Company Facility, Lancaster, Pennsylvania" (CMI Program Plan) (Geraghty & Miller, Inc. 1993) and the Pennsylvania Department of Environmental Protection (PADEP) May 30, 2008, Consent Order and Agreement (COA) issued as an alternative enforceable document, in lieu of a new post-closure area permit, after the Resource Conservation and Recovery Act (RCRA) Post-Closure Permit expired for the site.

This 2021 Annual Report provides the following:

- The results of the semi-annual sampling conducted during the fourth quarter of 2021 (October 2021);
- A summary of the principal activities conducted during the third and fourth quarters of 2021;
- A summary of the groundwater recovery and treatment system (GWRTS) operation;
- A description of the water sampling methodologies;
- A summary of the water-level and analytical data;
- A discussion of the analytical results and effectiveness of the groundwater recovery and treatment program;
- A statistical evaluation of historical analytical data; and
- An evaluation of shutdown criteria and monitoring well placement.

This report satisfies Item 18 of the COA. In addition, this report constitutes the RCRA Annual Progress Report for the facility, as discussed in Section 3.3.7 of the CMI Program Plan and in Section 8.3.2 of the Revised Operations and Maintenance (O&M) Plan, General Electric Facility, Lancaster, Pennsylvania (O'Brien & Gere, October 2010).

2.0 BACKGROUND

The GE Lancaster Facility consists of a parcel of land containing a closed, capped RCRA surface impoundment (referred to as the Lower Lagoon); a closed, capped landfill (referred to as the Upper Quarry), which formerly contained sludge from the Lower Lagoon; and a GWRTS.

The GE Lancaster Facility property was formerly part of the RCA Facility located on New Holland Avenue in Lancaster, Pennsylvania. The RCA Corporation owned the facility from the late 1940s to June 1986, when GE purchased the RCA Corporation. Burle Industries, Inc. subsequently purchased the former RCA manufacturing plant from GE in July 1987. As part of the sale agreement, GE retained the property containing the Lower Lagoon, the Upper Quarry, and the GWRTS (the GE Lancaster Facility).

Results from previous investigations had indicated chlorinated volatile organic compounds (VOCs) were present in groundwater beneath the GE Lancaster Facility. Thirty-four bedrock groundwater monitoring wells were installed to delineate the extent of VOCs in the groundwater at the site. Groundwater samples collected from the monitoring wells provide water quality data from specific depths in the aquifer. Efforts were made to address the VOCs by closing and capping the Lower Lagoon and Upper Quarry (Chester Engineers 1987).

In January 1987, construction began on the GWRTS, concurrent with the closure activities. The system was built during the early part of 1987 and was subsequently permitted for air emissions and sanitary sewer discharge. Operation of the system began in May 1987. Both the closing and capping of the Lower Lagoon and the Upper Quarry, and construction and operation of the GWRTS, were performed in accordance with the "Closure and Post Closure Plan, Upper Quarry and Lower Lagoon, RCA Corporation, Lancaster, Pennsylvania," (Chester Engineers 1987), which was approved by PADEP in September 1988.

In a letter to GE dated December 20, 1991, PADEP formally concluded that the GE Lancaster Facility was closed in accordance with the December 1987 Closure and Post-Closure Plan. On August 29, 1997, PADEP issued a Post-Closure Permit (Permit No. PAD 003026903) in accordance with the Pennsylvania Solid Waste Management Act (Act 97).

2.1 HYDROGEOLOGY

A brief summary of the geology and ground-water flow conditions at and near the GE Lancaster Facility is provided below.

Geology

The GE Facility is underlain by the Piedmont Lowland Section of the Piedmont physiographic province. The Piedmont Lowland Section consists of broad, moderately dissected valleys separated by broad low hills, and developed primarily on limestone and dolomite rock. Due to the underlying geology, karst topography and karst aquifers are common. The local relief in the Section is less than 100 feet, but may be as much as 300 feet, with elevations in the Section ranging from 60 feet to 700 feet. Drainage is basically dendritic in pattern, but some areas have virtually no pattern because of the well-developed subsurface drainage.

Two geologic formations outcrop in the vicinity of the GE Lancaster Facility: the Conestoga Limestone and the Ledger Dolomite. The Conestoga Formation is reported as being of Ordovician and Cambrian age, while the Ledger formation is reported as being of Cambrian age. Based on the reported ages, there are indications that at least portions of the formations were deposited at the same time.

A thin layer (generally less than 10-ft thick) of residuum (weathered bedrock) overlies the bedrock (Conestoga Limestone) at the GE Facility. The residuum is predominately a clay-rich soil and is present throughout most of the site. A saturated zone was reported in the 1992 RFI report in the residuum only in the Fill Material Area; the remainder of the residuum at the site is unsaturated.

The GE Facility is underlain entirely by the Conestoga Limestone. The Conestoga Limestone consists primarily of a thinly bedded, dark blue argillaceous limestone, and some thicker bedded, dark blue to light gray granular limestone with thin argillaceous partings, which are generally graphitic, micaceous, shale layers containing some pyrite. Some dark blue argillaceous dolomite has been identified in the formation, particularly in the vicinity of the GE Facility. The Conestoga Limestone is extensively folded with numerous calcite-filled veins (fractures).

The Ledger Dolomite occurs in areas east of the Conestoga River and along a narrow band on the west side of the river, about 1,000 ft east of the GE Facility. The Ledger Dolomite consists of a massively-bedded, sparkling white to light gray, coarse-grained dolomite. A few beds have been described as dark gray to dark blue. The Ledger Dolomite weathers to a dark, granular, crumbly surface and forms a characteristic deep-red clay soil, which contains ferruginous chert at some locations.

Ground-Water Flow

At all areas at and adjacent to the GE Facility, the water table is within the bedrock aquifer. However, a small portion of the overlying residuum (fill material at the GE Facility) was found to be saturated in the RFI Report. This saturated layer was found to be of limited extent. The groundwater in the residuum is likely a mixture of infiltrated rainfall and locations where the bedrock water table elevation is closer to the surface, due to shallower bedrock and connection to the Conestoga River. Where the water table is close enough to the surface to discharge to the ground surface, a spring can be observed. Spring 1, located to the east of production well GW-9001, is one of these areas. Spring 1 is part of the recovery network and is monitored as part of the remediation effort.

The bedrock aquifer underlying the GE Facility consists primarily of limestone and dolostone. These types of formations form landforms and aquifers referred to as karst. The main feature of a karst area is topography that indicates dissolution of underlying soluble rocks, such as carbonate rocks like limestone and dolostone. Limestone and dolostone can also have cavities form, where fractures allow water to flow through the rock, which allows for the ongoing dissolution of the rock. As the dissolution continues and the void expands, it can lead to a considerably large void space under the ground. When the void has become sufficiently large enough, the rock over the void can no longer support the overlying materials, and a collapse occurs and becomes a sinkhole, which is one of the best-known features of a kart topography.

These voids also provide a preferential pathway for groundwater flow, which can bypass the primary porosity of the rock. This results in a heterogeneous, anisotropic aquifer, which can be difficult to assess. Specifically, it can be difficult to properly position a well within this type of aquifer which is certain to intersect the desired groundwater flow (fractures). Even with addition studies, the position and orientation of the fracture may prevent installing within the desired fracture zone.

The void spaces underlying the ground surface also leads to softer areas for surface water to erode. These heavily eroded areas can be used to trace the underlying fractures. Common examples of these fracture traces are streams and swales. The process of performing a fracture trace can be difficult in urban regions, as many of the fracture trace features are often filled or relocated during property development. In areas where fracturing and faulting has not extensively taken place, groundwater movement in the Ledger and Conestoga formations is typically through bedding features. The area underlying the GE Facility has been observed to have a limited number of large fractures. Groundwater flow through these bedding features can be considerably less than the flow through the larger fractures, producing much lower discharge rates during pumping due to lower transmissivities.

The Conestoga Limestone, which is the aquifer which primarily underlies the site, is generally a low-yield carbonate rock. Well yields range from less than 1 to 1,000 gallons per minute (gpm); however, only one yield exceeds 225 gpm. The median yield of nondomestic wells is 65 gpm. Transmissivities based on analysis of four aquifer tests in the aquifer conducted for 24 to 72 hours on wells from 1,250 to 1,680 ft^2 /d (feet squared per day);

the median was 1,540 ft^2/d. The specific capacities of the four wells ranged from 15 to 27 gpm/ft. At the GE facility, we have documented that the yield and transmissivities are at or below the lower end of the ranges seen regionally.

2.2 GROUNDWATER RECOVERY AND TREATMENT SYSTEM

Groundwater beneath the GE Lancaster Facility is remediated in three stages: (1) groundwater recovery, (2) air stripper treatment to remove VOCs from the groundwater, and (3) vapor-phase treatment to remove VOCs from the air stripper off-gas.

1. A series of submersible pumps and associated piping are used to transport groundwater from the recovery points to the on-site treatment building located south of the Lower Lagoon.
2. An air stripper tower is used in the treatment building to remove VOCs from the recovered groundwater. Treated water is discharged to the sanitary sewer system under Industrial Wastewater Discharge Permit No. 1069, originally issued by the City of Lancaster on April 9, 1987. Permit No. 1069 was renewed effective April 10, 2012, again on April 1, 2017; it is valid until March 31, 2022.
3. Air emissions from the air stripper towers were regulated under PADEP Air Quality Permit No. 36-330-002. With the approval of USEPA and PADEP, a vapor phase treatment system entered operation on October 7, 1994, to remove the VOCs in the off-gas from the stripper towers. Because of the successful final inspection of the operating vapor phase treatment system conducted by PADEP and USEPA on November 18, 1994, PADEP informed GE that an air quality permit for the facility was no longer required. Subsequently, PADEP revoked Air Quality Permit No. 36-330-002 (letter from L. Ericson – PADEP to K. Klimas – GE dated November 22, 1994, and letter from R. Sutch – *de maximis, inc.* to S. Hinnant – USEPA and M.T. Bozon – PADEP dated November 22, 1994).

Operation and maintenance of the groundwater recovery and treatment system is performed following a 2016 O&M Manual for the treatment system and a 2017 Well and Pump O&M Manual for the recovery points, both prepared by Tetra Tech. Tetra Tech submitted to PADEP a draft revision of the Well and Pump O&M Manual on June 29, 2020. PADEP provided comments on September 18, 2020, and Tetra Tech responded to those comments on September 28, 2020.

2.3 GROUNDWATER RECOVERY AND TREATMENT SYSTEM MODIFICATIONS

Recovery of groundwater from the site began in May 1987. Initially, groundwater was recovered from Well AW-4, Well 5, Well 14, and Spring 1 and pumped to the groundwater treatment building. In June 1987, Wells 15 and 16, located in the Upper Quarry Area, were added to the recovery system.

Monitoring wells AW-3 and 18 were converted to recovery points in July 1988 to enhance recovery of groundwater from the site. During the summer of 1988, a small seep was observed along the western side of McGrann Run near surface water monitoring station SW-2. This seepage was designated Spring 2 and was converted to a recovery point. Spring 2 had been dry during all sampling events after October 1999.

Inorganic precipitation buildup in the air stripper columns was noted in 1988. During the first quarter of 1989, a chemical sequestering agent feed line was added to the on-site treatment system to treat recovered water before water was introduced to the stripping towers. The sequestering agent continues to be effective in minimizing the buildup of precipitate.

In August 1989, well 16 was taken out of service because of the low volume of groundwater recovered from the well. The reduced amount of groundwater recovered from well 16 was the result of the lowering of the water table in the Upper Quarry Area caused by groundwater recovery. Additional discussion regarding removal of well 16 from the groundwater recovery system was provided in the 1989 RCRA Annual Report (Geraghty & Miller 1990).

On February 11, 1992, with the approval of PADEP and USEPA, well GW-9001 was connected to the GWRTS as an additional recovery well. Well GW-9001 was added to the recovery well network based on the elevated levels of VOCs detected in groundwater for this well and its relatively high yield. Data collected from a February 1992 pumping test show that the combined pumping effects of the new recovery well GW-9001 and recovery wells AW-3, AW-4, and 18 create a capture zone that extends throughout the Lower Lagoon Area and more than 200 feet downgradient of the GE Lancaster Facility in the deep bedrock aquifer (Geraghty & Miller August 1992).

During 1992, the usefulness of well 15 as a recovery well became marginal as a result of the gradual decline in the amount of groundwater recovered from this well. Similar to well 16, the decline in the amount of groundwater recovered from well 15 was primarily the result of pumping wells 5 and 14 lowering the water table in the unconsolidated material near the Upper Quarry Area. Well 15 was removed from service in November 1992. Additional information regarding the status of well 15 is contained in the January 13, 1993, letter from R. Sutch – *de maximis, inc.* to T. Miller – PADEP and J. Buntin – USEPA and the 1992 RCRA Annual Report (Geraghty & Miller 1993).

In March 1998, recovery well 5 was temporarily shut down because of significant fouling with iron and scale-producing ions. On August 13, 1999, USEPA, PADEP, Brown & Caldwell (formerly Eckenfelder, Inc.), O'Brien & Gere, and GE met to discuss GWRTS modifications proposed in the Five-Year Corrective Measures Assessment Report (February 1999) completed by Brown & Caldwell. Two approved modifications were completed as a result of this meeting. The operation of recovery wells AW-3 and AW-4 was discontinued in December 1999 to evaluate whether the continued operation of recovery well GW-9001 can effectively recover affected groundwater from the area of wells AW-3 and AW-4. In addition, well GW-9006 was temporarily incorporated into the GWRTS in November 1999 as a groundwater recovery well to facilitate removal of contaminated groundwater from this area. These modifications were made with the approval of PADEP and USEPA in a letter dated August 27, 1999, from L. Matyskiela (USEPA) and a letter dated August 27, 1999, from T. Miller (PADEP).

The rehabilitation of well 5 was also discussed at the August 13, 1999 meeting. Recovery wells 5 and 14 were rehabilitated and placed back on line in January 2000. The results of the rehabilitation were documented in the first and second Quarterly Reports (2002), the Annual Progress Report of 2000, and the 2001 Semi-Annual and Annual Reports.

GE, USEPA, and PADEP met on February 6, 2001, to discuss the groundwater recovery program, monitoring well network, and shutdown criteria. On behalf of GE, O'Brien & Gere prepared a follow-up technical memorandum regarding the shutdown of recovery wells 5 and 14, which was submitted to USEPA and PADEP on March 16, 2001. This memorandum previewed the proposed modifications to the GE Facility groundwater monitoring program, in conjunction with the anticipated shutdown of wells 5 and 14.

The O&M Plan was revised in 2001 to reflect these system modifications. The updated O&M Plan contained a contingency section that discusses actions that GE will take in the event that target VOCs or metals are consistently detected at the Upper Quarry monitoring points as a result of the approved modification of the GWRTS. As part of this contingency plan, quarterly groundwater sampling was conducted for Upper Quarry downgradient compliance monitoring wells (wells 7D, 10D and 12D, **Figure 2**). Consistent with the July 12, 2001, PADEP letter, the O&M Plan was part of the Class I permit modification for the system modifications submitted March 20, 2002.

On April 4, 2002, wells 5 and 14 in the Upper Quarry Area were shut down and the revisions to the monitoring program were implemented. The modifications were made with the approval of PADEP and USEPA in a letter dated July 12, 2001, from PADEP to GE and submittal of the Class I permit modification. The approval letter for the Class I Permit Modification from PADEP was received June 17, 2002 (and provided in the July 2002 Semi-Annual Report).

To monitor the effects of wells 5 and 14 shutdowns, quarterly groundwater monitoring was implemented for the Upper Quarry downgradient compliance wells, in accordance with the O&M plan. After well 10D sample results

had been received from the April 2003 event that indicated the concentrations of cis-1,2-dichloroethene (DCE) and trichloroethene (TCE) in groundwater exceeded maximum contaminant levels (MCLs), well 14 pumping resumed on May 19, 2003.

O'Brien & Gere prepared the Upper Quarry Area Enhanced In-Situ Biodegradation (EISB) Work Plan, dated August 2003, to enhance VOC biodegradation in the Upper Quarry Area of the site. The Upper Quarry Area EISB Work Plan was approved by PADEP and USEPA via letter dated September 5, 2003. Biostimulation of the Upper Quarry Area groundwater was conducted after the semi-annual sampling conducted on October 7, 2003.

EISB pilot testing was also conducted in the Lower Lagoon Area in an effort to further degrade the chlorinated VOCs in groundwater. EISB activities were conducted in accordance with the EISB Pilot Test Work Plan (O'Brien & Gere 2002) approved by USEPA via a letter dated March 27, 2003, and by PADEP in a letter dated March 24, 2003. The EISB pilot test began on March 31, 2003 and was completed in 2006.

Favorable results of the ethanol circulation test in the Lower Lagoon Area included creation of reducing redox conditions in groundwater, complete reductive dechlorination of VOCs, and marked growth of emplaced microbes in the vicinity of the ethanol circulation. Based on these results, pumping of GW-9001 was suspended to facilitate the downgradient expansion of the biologically active zone created around GW-9001. The shutdown of GW-9001 was approved by PADEP and USEPA in letters dated January 2, 2004, and December 23, 2003. Ethanol delivery through injection wells in the Lower Lagoon bedrock aquifer continued after shutdown of GW-9001 under the gradient induced by the operation of recovery wells 18 and GW-9006 and the natural groundwater flow gradient. GW-9001 was shut down to test a transition from active electron donor delivery and capture to a passive electron donor "batching" approach. Ethanol injection was suspended in the Lower Lagoon on October 10, 2004, in preparation for bio stimulation via batch delivery of emulsified soybean oil amendment (Newman Zone) through GW-9001. The Newman Zone bio stimulation event was conducted October 10 and 11, 2004, in the Lower Lagoon. EISB pilot test monitoring was continued in the Upper Quarry and Lower Lagoon Areas from the transition to passive electron donor "batching" in 2004 through October 2006. Pumping at GW-9001 resumed on June 1, 2007.

The results of the 3-year pilot study indicated that the intrinsic biodegradation observed in the site aquifer could be enhanced through delivery of soluble electron donors. The study also demonstrated that introduced microorganisms could grow and accelerate naturally occurring biodegradation of VOCs in site groundwater. Distribution of soluble electron donors under natural groundwater flow conditions was a limiting factor in implementing EISB full-scale because of the complexity of groundwater flow in the bedrock aquifer. Biodegradation was enhanced by the EISB activities to date.

In the spring of 2009, the GWRTS was temporarily shut down for 6 weeks to install new equipment at the treatment system building. O'Brien & Gere replaced the former packed column air stripping towers and associated pumps and blowers with a new, low-profile air stripper from QED Environmental Systems. The equipment was changed out to improve the GWRTS efficiency and reliability. The GWRTS was also outfitted with a new control system that allows the operator to monitor and control the equipment remotely via an Internet connection. The GWRTS system upgrades were completed in May 2009 and the treatment system was brought back on line on May 26, 2009. As a result of the system upgrades, an updated O&M manual and O&M plan were developed to accommodate the new equipment and operating system.

The O&M Plan was revised in October 2010 to include the plant upgrades completed in May 2009. The Revised O&M Plan was updated in December 2010 with a revised SAP. Significant changes to the SAP included changing the VOC analysis method from USEPA 601 and 602 to USEPA 8260B, reducing the sampling frequency from quarterly events to semi-annual events, and reducing the frequency of statistical evaluation of groundwater data to biennial. These revisions were pre-approved by PADEP via a letter dated July 20, 2010 and implemented beginning January 2011.

During 2018, a new recovery well, identified as GW-9020, was installed to provide additional groundwater production near GW-9001, which had observed decreasing yield since originally installed. GW-9020 is an open bedrock boring to 350 feet below ground surface, with steel casing to 20 feet below ground surface. To increase yield, the borehole was hydro-fractured after drilling. A new pump was installed at a depth of 300 feet below ground surface. The boring for GW-9020 was advanced June 2018. Pumping began in October 2018 after all connections to the treatment system were in place.

3.0 GROUNDWATER RECOVERY AND TREATMENT SYSTEM OPERATION

Tetra Tech monitors the volume of water pumped from the recovery points and the total amount of water treated by the air stripper. The measurements of gallons pumped from each recovery point and the effluent and from the treatment plant effluent are provided in **Appendix A**. Monthly totals of treated water discharged are provided in **Table 1**. A record of the 2021 Lancaster area monthly and daily precipitation records, along with recovery point flow readings, are presented in **Figure 3**.

During 2021, an estimated 4,116,110 gallons of water were measured to have been treated and discharged. This volume represents a decrease in production of 1,135,227 gallons of water (-23 percent) from 2020, based on treatment plant effluent flow meter readings.

Annual precipitation increased from 42.59 inches in 2020 to 44.35 inches in 2021 (+4 percent).

Flow readings are also taken for each recovery point. Flows from each recovery point showed decreases or increases as follows. Changes in annual total flow measurements as measured at the recovery points are as follows (versus 2020 quantities).

- Recovery from Well 14 decreased by 49 percent.
- Recovery from Well 18 increased by 15 percent.
- Recovery from GW-9006 increased by 1 percent.
- Recovery from GW-9001 decreased 2 percent.
- Recovery from Spring 1 increased by 7.5 percent.
- Recovery from GW-9020 decreased by 29 percent.

Respective differences in the estimated well production may be related to many factors. During 2021, maintenance needs for the pumps in wells 14 and GW-9020 resulted in significant downtimes for those recovery points. Both pumps were replaced during the course of the year to address lower recovery rates or clogging / damage found during routine inspection. Pump maintenance work done during the year is described in Section 3.2 and, in more detail, in Quarterly Inspection and Maintenance Reports.

3.1 TREATMENT OF RECOVERED GROUNDWATER

Air stripping operations to remove chlorinated VOCs from the recovered groundwater (influent) are performed at the on-site treatment building located south of the Lower Lagoon.

Treated water (effluent) is monitored prior to discharge to the City of Lancaster sanitary sewer system under Industrial Wastewater Discharge Permit No. 1069. Effluent water samples from the treatment system are collected and analyzed for VOCs and pH on a quarterly basis and for metals on a semi-annual basis. In addition, quarterly influent water samples from the treatment system are collected and analyzed for VOCs. Tetra Tech conducted the influent and effluent water sampling, and Pace Analytical Laboratories performed the laboratory analysis. The influent/effluent sample results are summarized in **Table 2**. Laboratory data are in **Appendix C**.

A summary of the VOC mass removed per million gallons treated and the estimated total VOC mass removed in 2021 is presented in **Table 3**. The estimated mass of VOCs removed from the recovered groundwater is based on the concentration of VOCs detected in the treatment system influent and effluent water samples collected from the treatment system each quarter.

Since the influent/effluent samples are collected quarterly, the estimate of the mass removed varies according to several factors (such as varying VOC concentrations at the recovery wells, and pumping status of the recovery wells when the samples are collected). A review of the analytical results indicated that the air stripper effectively removes VOCs from the influent water. The removal rates were greater than 96 percent (**Table 2**).

There were detectable VOC concentrations in the effluent water samples during the first, third, and fourth quarters 2021. Refer to **Table 2**.

As in **Table 2**, first quarter total VOC values are based on average of three sampling events – January 13, 2021 (36.3 µg/L), February 12, 2021 (6.4 µg/L), and March 1, 2021 (not detected). The extra sampling events were done due to address detections in effluent in December 2020, and to evaluate effectiveness of subsequent adjustments and maintenance done. During the first quarter, maintenance was done primarily to replace gaskets on the air stripper door and trays to address exceedances; after the maintenance was done, the effluent concentrations dropped. Also as shown in **Table 2**, while there were third and fourth quarter detections (3.7 µg/L and 1.9 µg/L, respectively), the concentrations were relatively low.

The total estimated mass of VOCs removed by the treatment system during 2021 was 16.4 pounds (**Table 2 and Table 3**), based on the quarterly influent sample TVOC concentrations collected in 2021. This is a decrease of 3.1 pounds compared to 2020. The average of influent TVOC concentrations in 2021 (481.7 µg/L) was somewhat lower than for 2020 (544.3 µg/L).

3.2 GROUNDWATER RECOVERY AND TREATMENT SYSTEM DOWNTIME

Periodically during 2021, the GWRTS was temporarily shut down for repairs and/or maintenance. The total estimated downtime of the groundwater recovery system in 2021 was approximately 19.9 days, resulting in a groundwater recovery system operational uptime of 94.6 percent. Most was related primarily to one event in June. On June 23, the system was down on arrival for a routine inspection. It was restarted at approximately 0745 AM. The system history showed it had been down as of approximately 1900 PM on June 9; this was later in the day after the Well 14 pump had been replaced and brought back online. The system has automatically disabled on June 9; unfortunately, the system did not issue a notification alarm. Initially, the internet provider diagnosed an internet outage; the internet connection issues was later determined to have resulted from a faulty modem. As a corrective action, new internet service was installed on June 28 (service was changed to a cellular hot spot). Down time for this event was approximately 13.5 days.

Additional details on the down-time occurrences are documented in the Quarterly Inspection and Maintenance Reports submitted to PADEP.

3.3 ACTIVITIES AND MAINTENANCE PERFORMED DURING THE THIRD AND FOURTH QUARTER 2021

On-site maintenance was performed in accordance with the 2016 O&M Plan. Primary activities and maintenance performed during the third and fourth quarter 2021 included:

- Bi-weekly O&M visits.
- Quarterly inspections on September 22 and December 2, 2021.
- Air stripper system performance sampling on August 12 and October 20, 2021.
- Effluent sampling for compliance with the City of Lancaster sewer discharge permit on October 20, 2021.
- The third quarter vapor treatment carbon changeout on September 22, 2022 and the fourth quarter event was conducted on December 2, 2021.

Other notable non-routine maintenance for recovery points included the following:

Recovery Well 14 Pump

- On May 27, the pump in recovery well 14 was pulled and inspected as part of annual inspection and damage to impellers was observed. A new pump was installed and brought back online June 9.

- On May 27, the totalizer / flow meter at Well 14 was replaced with a non-contact type meter due to apparent fouling of the previous meter and resultant discrepancies observed in the total flow at the well head and within the treatment plant.
- On December 2, during a routine biweekly visit, the Well 14 pump was found not operating. The totalizer reading showed approximately half the yield that would have been expected since the prior biweekly inspection on 11/16/21. On December 10, the pump was pulled and assessed. There was clogging and damage to the pump. Damage to the electrical control box wiring was also found. All were placed and brought back online December 10.

Recovery Well GW-9020 Pump

- On September 22, the pump in recovery Well GW-9020 was replaced. Yields had been down in the time approaching, and had not been improved through inspection and cleaning. Also, reduced yields were not believed to have resulted from well conditions, as the well was recently installed in 2018 and first came online in October 2018 (i.e., well redevelopment was not likely to result in improved yield).
- The October 7 routine biweekly inspection flow reading revealed the amount of groundwater recovery since the prior inspection looked low versus previous periods. The pump was verified not working and outfitted with a new motor on October 13. On November 3, the pump was found not operating. On further assessment, a different motor type was needed in installed on November 16.

Recovery Well 18 Pump

The pump in Recovery Well 18 was pulled as part of annual inspection on December 14. Given signs of fouling and clogging, the pump was replaced on the same day.

4.0 WATER QUALITY SAMPLING

Tetra Tech conducted the 2021 annual water quality sampling activities during the week of October 4, 2021. The groundwater sampling program consists of 17 wells (5, 6, 7D, 10D, 11S, 12D, 14, 15, 18, AW-3, AW-4, GW-9001, GW-9004, GW-9006, GW-9007, GW-9008, GW-9020) and one spring (Spring 1 – also a recovery point). However, during this event, monitoring well 11S was not sampled, because after purging the well did not recharge an ample enough volume for sampling.

Wells 7D, 10D, 12D, AW-4, GW-9008, and Spring 1 have been established as compliance points in the "Corrective Measure Implementation Program Plan" (Geraghty & Miller 1993). The remaining wells are additional monitoring points selected to monitor the effectiveness of the groundwater recovery system.

Additionally, Tetra Tech collected samples from the residential well at 1453 Pleasure Road.

4.1 METHODOLOGY

On October 4, 2021, water levels were measured in 43 wells and one spring at or in the vicinity of the GE Lancaster Facility and in wells at the adjoining Burle Industries, Inc. facility. Monitoring wells 18 and BW-5, could not be accessed and could not be measured. Additionally, water from monitoring well 3D was surfacing at the time of monitoring. Surface water levels were measured in all four surface water stations (SW-1, SW-2, SW-9002, SW-9003).

Before water levels were measured in wells, the wellhead ambient air space was screened with a mini-RAE photoionization detector (PID) to screen for the presence of VOCs in accordance with the Site Health and Safety Plan (HASP). Three readings were obtained at each well location: (1) ambient background, (2) within the breathing zone around each well head, and (3) at the well head. All PID readings were below guidance limits as stated in the HASP (Tetra Tech August 2020).

Water levels were measured to the nearest hundredth of a foot from an established measuring point using an electronic water-level measuring device. The measuring point at each well is a mark at the top of the well casing; the measuring point at each surface water station is a previously established benchmark. To avoid cross-contamination, the water-level measuring device was thoroughly cleaned between wells with an Alconox detergent solution and then rinsed with distilled/de-ionized water. Water-level data for the Fall 2021 sampling round are presented in **Table 4**. Site well and spring locations are shown in **Figure 2**.

4.2 WELL EVACUATION

Standing water was evacuated from the wells prior to sampling to collect a groundwater sample representative of aquifer conditions. The volume of standing water in the well was calculated and either three times the volume was evacuated, or the well was pumped dry and allowed to recover until there was sufficient water in the well for sampling. Monitoring wells were evacuated with a submersible pump using the evacuation methods listed in **Table 4**. Groundwater sampling field logs and well purging logs for each individual sampled well are included in **Appendix B**.

As stated in Francis Fair's October 29, 1991, letter (PADEP 1991), groundwater evacuated from wells can be discharged directly to the ground surface, provided that the concentrations of TVOCs in the three previously collected groundwater samples are less than 100 micrograms per liter (µg/L) and individual constituents are at concentrations that do not exceed federal or Pennsylvania primary and secondary drinking water standards.

Table 4 also summarizes the disposition of purge water. For the November 2021 event:

- From 5 monitoring wells (AW-4, 5, 11S, GW-9004 and GW-9008), purge water was pumped into a 275-gallon cube tank, transported to the on-site air stripping facility for treatment.

- From the 5 recovery wells (14, 18, GW-9001, GW-9006, GW-9020), approximately 5 gallons were purged and containerized at each location prior to sampling from a sample port. Purge water was transported to the on-site air stripping facility for treatment.
- The Spring 1 recovery point was also purged of approximately 5 gallons, sampled from the sample port, and purge water directed into the collection system and to the treatment plant.
- From 7 other monitoring wells (AW-3, 6, 7D, 10D, 12D, 15, and GW-9007), purge water was discharged to the ground surface; care was taken to prevent erosion of soil by the purge water discharge.

4.3 SAMPLE COLLECTION AND ANALYSIS

Sampling procedures were performed in accordance with the SAP. The samples were submitted to Pace Analytical Laboratories, Inc., for analysis of selected VOCs (in accordance with USEPA Methods 8260B) and selected dissolved metals - cadmium, and nickel (EPA Method 6010B).

Monitoring well groundwater samples were collected following a three-volume well evacuation using either a sample spigot on wells with dedicated sampling pumps or a single-use disposable bailer after evacuation with a portable submersible pump (Grundfos RediFlo 2 with variable frequency drive [VFD] control). Each bailer was lowered into the well using a new polypropylene cord. To avoid cross-contamination, the portable submersible pump was thoroughly cleaned between wells with an Alconox detergent solution and then rinsed with distilled/de-ionized water.

To verify that the depth to water in each well sampled using a bailer, the depth to water was confirmed during the purging process and at the time of sample collection. These in-field measurements are documented on the individual groundwater sampling forms included in **Appendix B**.

Field parameters (pH, specific conductance, dissolved oxygen, oxidation reduction potential, and temperature) were measured concurrently while sampling. The summary of field parameter measurements for pH, specific conductance, and temperature, as well as qualitative descriptions of the water samples when they were collected, are highlighted in **Table 5**. The field parameter measurements were taken using an YSI Model 556. “Grab” water quality samples were collected at the initial start of purging and after each pumped volume (3 volumes). The grab sample measurements were recorded on the groundwater sampling field logs provided in **Appendix B**.

Samples for VOC analysis were collected into three 40-milliliter (mL) vials preserved with hydrochloric acid and sealed with a Teflon-lined cap without headspace. Samples for metals analysis were filtered in the field through a 0.45-micron filter into a 250-mL poly bottle preserved with nitric acid to a pH of less than 2. All sample bottles were labeled with the well identification number, site identification, date of sample collection, and sampler’s initials.

Quality assurance/quality control samples were collected during the annual sampling event. Matrix spike and matrix spike duplicate analyses were performed on the sample collected from Spring-1. A duplicate sample was collected from AW-4. A field blank for analysis of VOCs and dissolved metals was prepared from laboratory supplied water that was poured from the bottle into the disposable bailer and then into appropriate containers. The field blank was sampled at location GW-9020. One trip blank, for VOC analysis only, consisting of two unopened 40-mL vials of laboratory-supplied organic-free water, was included in the sample delivery.

All samples after collection were stored in ice-filled insulated coolers until they were delivered to the laboratory. SAP chain-of-custody procedures were followed throughout the sampling event. Copies of chain-of-custody forms are provided in **Appendix C**.

5.0 GROUNDWATER LEVELS AND HYDRAULIC GRADIENT

Groundwater level data are provided in **Table 4**. The groundwater levels reflect conditions during the operation of recovery wells 14, 18, GW-9001, GW-9006, GW-9020, and Spring 1. It should be noted that those pumps cycle (they do not operate continuously), and as a result the elevations of the water table in those wells are expected to fluctuate as designed.

A summary of groundwater potentiometric elevation data collected during 2021 is provided in **Table 6**. Groundwater elevations measured in October 2021 were used to prepare figures depicting the configuration of the potentiometric surface of the shallow bedrock aquifer (**Figure 4**) and of the deep bedrock aquifer (**Figure 5**). Depictions of groundwater contours were generated using Surfer software.

Based on a review of the water-level data collected in October 2021, the configuration of the potentiometric surface and the hydraulic gradient observed in the shallow bedrock aquifer are consistent with previous findings.

The shallow bedrock aquifer potentiometric surface configuration is depicted in **Figure 4.** This indicates overall flow of shallow groundwater flow across the site to the east-southeast. Although there are well construction differences (some wells intercept or nearly intercept the shallow water table, others are cased deeper than the shallow water table), the shallow aquifer potentiometric surface map does accurately represent the overall potentiometric surface.

It has been observed that there is a vertical component to groundwater flow at the site at some locations, such as near AW-3 and AW-4 (Lower Quarry), groundwater flow is downward and appears to be influenced by the pumping of the deeper aquifer. At other locations, such as Wells 3S and 3D (Lower Quarry), groundwater flow appears to be upwards, resulting in an artesian condition in 3D. These variations in vertical flow are observed to likely be caused by the nature of the karst geology underlying the site. As mentioned before, the groundwater contours generated utilizing software (or by hand) provided what could be considered a “smoothing” of the actual groundwater flow conditions within karst geology. However, typical karst flow is through blocky, often perpendicular fractures, which can result in different elevations at well locations in close proximity, as these fractures can operate as individual “pipes” for groundwater flow. Based on the observation, Well 3S is representative of the shallow aquifer, and is generally connected to the nearby flow pattern. Well 3D appears to be supplied groundwater from a different recharge area than the surrounding deep aquifer wells, and is not considered to be representative of either the shallow or deep groundwater aquifer.

In the Upper Quarry Area, recovery well 14, a 180-foot well with open bedrock well construction should capture shallow groundwater. In the Lower Quarry Area shallow groundwater is similarly collected at the Spring 1 recovery point and also the open borehole Recovery Wells GW-9001 and GW-9020.

The deep bedrock aquifer groundwater elevation contour is depicted in **Figure 5**. This suggests the combined effects of pumping recovery wells GW-9001, GW-9006, GW-9020, and 18 create a capture zone that extends throughout the Lower Lagoon Area and off site. It is recognized the contouring software algorithms created depictions may not represent actual conditions. Also, the presence of karst fractured bedrock geology also presents limitations in the use of traditional hydrogeological evaluation using available contouring software. A groundwater divide is noted along Pleasure Road, with groundwater flow in the deep aquifer from west to east on the western side of the road, and from northeast to southwest on the western side of the road. The overall pattern of the contours indicates the regional capture of the recovery wells, in particular, Wells 18 and GW-9001.

The average hydraulic gradient within the shallow and deep bedrock aquifers, as measured from the potentiometric surface maps presented as **Figures 4 and 5**, is approximately 0.042 to 0.25 feet per foot (ft/ft). However, the potentiometric surface and hydraulic gradient in the deep bedrock aquifer are steeper near the recovery wells.

Section 264a.97 (2) (iv) of the PADEP Hazardous Waste Management Regulations requires a calculation of the rate of groundwater flow. As discussed in the Geraghty & Miller 1987 RCRA Annual Report (Geraghty & Miller 1988), the nature of groundwater flow in fractured anisotropic bedrock makes groundwater velocities difficult to assess and the flow may vary widely between individual fractures. Calculations based on the assumptions for groundwater gradient, hydraulic conductivity, and transmissivity based on the October 2021 water elevation data (also excluding pumping well elevation data) indicate the approximate range for groundwater flow velocities to be 0.19 to 0.21 foot per day (ft/day). The calculations used to obtain these approximate groundwater flow velocities are provided in **Appendix D**.

6.0 WATER QUALITY RESULTS

Water quality sampling and analysis have been performed on a routine basis at the site since 1982. Tetra Tech conducted annual sampling at the GE Lancaster Facility in October 2021 in accordance with the SAP. In addition to the semiannual groundwater sampling, this section contains the results of residential well sampling conducted on July 28, October 6, November 23, and December 16, 2021.

Field parameter data collected during the sampling event are provided in **Table 5**. The laboratory data sheets for samples collected, as well as an attached memorandum that evaluates the usability of the analytical data and data validation report (prepared by Tetra Tech) are included in **Appendix C**. The quality of the data was found to be usable as qualified.

The VOC data obtained from October 1998 through October 2021 are summarized in **Table 7** and shown in graphs of concentration versus time in **Appendix E**. Analytical results for metals from October 1998 through October 2021 sampling events are provided in **Table 8**. Primary MCLs are specified in **Tables 7 and 8**. The distribution of VOCs (1,2-dichloroethene [1,2-DCE], trichloroethene [TCE], vinyl chloride, and tetrachloroethene [PCE]) in groundwater from October 2021 sampling event is summarized in **Figures 6 to 9**.

The following discussion is based on a review of the analytical results obtained during the monitoring program conducted at the GE Lancaster Facility in October 2021. Section 6.1 includes a discussion of the analytical results related to monitoring in the Upper Quarry Area, and Section 6.2 includes a discussion of the analytical results related to monitoring in the Lower Lagoon Area. Section 6.3 includes a discussion of analytical results for groundwater from the residential well at 1453 Pleasure Road.

6.1 UPPER QUARRY AREA

Upper Quarry Area Wells 5, 6, 7D, 10D, 12D, 14 and 15 were sampled in October 2021 according to the SAP. Normally, Well 11S would be sampled; as mentioned above in Section 4, there was not enough yield from MW-11S to collect a sample.

As summarized in **Table 7** and depicted in the graphs in **Appendix E**, the analytical results of the October 2021 sampling for VOCs indicate the following:

- The two wells with the highest exhibited the highest TVOC concentration in the Upper Quarry Area are Well 5 (7,853.9 µg/L) and recovery well 14 (65.3 µg/L). This is understandable as these wells are on the downgradient edge of the quarry source area.
- The TVOC concentration at Well 5 is attributed primarily to cis-1,2-DCE (5,720 µg/L) and vinyl chloride (2,080 µg/L). This TVOC concentration in is generally higher than the historical range. The detected TVOC concentration is the highest since 2018 (8,073 µg/L).
- At Well 6, the groundwater sample had a TVOC concentration of 2.60 µg/L. This shows a slight increase in TVOCs since 2017. Most of the historic results are either not detected or below 4 µg/L, but there was a high anomaly in 2011 (46.8 µg/L).
- At Well 7D, the groundwater sample had a TVOC concentration of 2.90 µg/L. However, the majority of this TVOC was vinyl chloride (1.9 µg/L). This TVOC concentration is generally consistent with historic values, low or not detected.
- At Well 10D, the TVOC concentration was also low (4.3 µg/L), primarily attributed to cis-1,2-DCE (2.9 µg/L).
- VOCs were not detected at Well 12D, consistent with past results.

- The TVOC concentration at Well 14 (65.3 µg/L) is attributed primarily to cis-1,2-DCE (61.2 µg/L) and TCE (3.5 µg/L). The TVOC value is generally consistent with recent historic results.
- VOCs were not detected in groundwater at Well 15. Results have been non-detect since 2012.

Groundwater in the vicinity of Well 5 (open borehole completed at 52.6 feet) appears to be captured by the nearby Recovery Well 14 (open borehole well 180 feet deep) given the two wells are in close proximity and the shallow groundwater contour depicted in **Figure 4**. The difference in the concentrations found at the two wells are believed to be related to dilution. Well 14, a deeper well with fractures at 104 and 165 feet, generally produces the most water of all recovery points on the site. The groundwater contour shown in **Figure 5** suggests also that groundwater in the vicinity of wells in the Upper Quarry Area (6, 7D, 10D, 11S, 12D, and 15) also is captured by Well 14, thereby contributing to the dilution of VOC concentrations from the vicinity of Well 5, as those wells also have lower concentrations of VOCs.

Groundwater samples collected from Wells 5, 6, 14 and 15 in the Upper Quarry Area were analyzed also for select dissolved metals: nickel and cadmium (**Table 8**).

- Cadmium was detected in groundwater from Wells 5, 6, and 14 at concentrations of 0.0044 J milligrams per liter (mg/L), 0.0043J mg/L and 0.0045J mg/L, respectively. Cadmium was not detected in Well 15. The EPA MCL for cadmium is 0.005 mg/L.
- Nickel was detected in Well 5 (0.0192 mg/L), 14 (0.0117 J mg/L), and 15 (0.0436 mg/L), and was not detected in Well 6. The concentration of nickel, for each well detected, was within the historical range. The USEPA remanded the MCL for nickel.

6.2 LOWER LAGOON AREA

Lower Lagoon Area wells GW-9001, GW-9004, GW-9006, GW-9007, GW-9008, GW-9020, AW-3, AW-4, Well 18, and Spring 1 were sampled during the October 2021 event. As summarized in **Table 7** and depicted in the graphs in **Appendix E**, the analytical results of the November 2020 sampling indicate the following:

- The highest TVOC in the Lower Lagoon Area was GW-9001 (1399.40 µg/L)(**Table 7**). The TVOC concentration is attributed primarily to TCE (944 µg/L) and cis-1,2-DCE (440 µg/L). The results remain lower than past averages. Historically, the highest TVOC concentrations in the Lower Lagoon Area often have been observed at recovery well GW-9001. Since recovery well GW-9020 was brought on line in October 2018, GW-9001 concentrations appear to have been decreasing. Recovery well GW-9020 had been constructed, by design, in close proximity to GW-9001, to counter what had been lower yields from GW-9001 over time.
- The TVOC concentration in groundwater at GW-9004 was 282.1 µg/L. The TVOC concentration is attributed primarily to cis-1,2-DCE (239 µg/L) and TCE (34.9 µg/L) and is generally consistent with results dating back to 2011.
- The TVOC concentration for recovery well GW-9006 was 241.5 µg/L, attributed primarily to cis-1,2-DCE (211 µg/L) and PCE (23.3 µg/L). The concentration GW-9006 observed during this sampling event is the lowest recorded since 1998.
- No VOCs were detected at GW-9007. Historically there have been nominal detections of PCE and TCE (one time since 1998).
- At well GW-9008, the TVOC concentration in groundwater was 271.5 µg/L. The TVOC is comprised primarily of cis-1,2-DCE (226 µg/L), with also TCE (27.9 µg/L), and vinyl chloride (16.4 µg/L). This TVOC value is generally within the same magnitude as results dating back to 1998.

- The TVOC concentration in groundwater at recovery well GW-9020 was 315.8 µg/L. The TVOC concentration is attributed primarily to cis-1,2-DCE (215 µg/L) and TCE (60.1 µg/L).
- The TVOC concentration in groundwater at recovery well 18 was 367.6 µg/L. The TVOC concentration is attributed primarily to cis-1,2-DCE (201 µg/L) and TCE (157 µg/L) and is generally consistent with results dating back to 1998.
- No VOCs were detected in well AW-3. This is consistent with historic results back to circa 2011, which have been non-detect or close to detection limits.
- The TVOC concentration at AW-4 was 28.04 µg/L and is within the historical range. The TVOC concentration is attributed primarily to cis-1,2-DCE (16.4 J µg/L) and TCE (10.6 J µg/L).
- The water sample from the Spring 1 recovery point contained 47.9 µg/L TVOC. TVOC concentration is primarily attributable to TCE (32.0 J µg/L) and cis-1,2-DCE (14.9 µg/L).

Lower Lagoon Area groundwater samples collected from well GW-9001, GW-9020, AW-4, and Spring 1 were also analyzed for select dissolved metals, nickel and cadmium (**Table 8**).

- Cadmium was detected at Spring 1 at a concentration of 0.0482 mg/L. Cadmium was detected in estimated concentrations at well GW-9001 (0.0014 J mg/L), GW-9020 (0.00052 J mg/L), and AW-4 (0.00074 J mg/L). The USEPA MCL for cadmium is 0.005 mg/L. Groundwater collected from Spring 1 is collected and recovered to the groundwater treatment system.
- Nickel was detected in all Lower Lagoon Area groundwater samples at concentrations: Spring 1 (0.197 mg/L), AW-4 (0.0414 mg/L), GW-9020 (0.0277 mg/L), GW-9001 (0.0261 mg/L). The USEPA remanded the MCL for nickel.

6.3 RESIDENTIAL WELL

In February 2019, GE installed carbon treatment system at (b) (9) [redacted] This section summarizes the results of sampling in the third and fourth quarters of calendar year 2021. **Appendix C** contains the laboratory analytical results.

GE has been sampling this well water on a quarterly basis. Well water samples are typically being collected from the three locations as follows:

- "Influent" water (well water that has not yet passed through your filter and softener, or through the carbon treatment).
- "Midfluent" water (water that has passed through the first of the two carbon cannisters).
- "Post-Treatment" water (water that has passed through the second carbon cannister and will enter the piping in your home).

During the fourth quarter, three sampling events were conducted instead of one event; two additional sampling events were conducted to assess some of the results, related to assessing the detection of acetone, and this is discussed in more detail below.

The water samples were collected analyzed for the organic compounds that Tetra Tech monitors on behalf of the General Electric Company (GE) as part of the local groundwater remediation project. The post-treatment water is being monitored additionally for cadmium and nickel.

Third Quarter Sampling – July 28, 2021

The laboratory reported that none of the parameters related to the GE project were detected in any sample above their detection limits, with one exception. Nickel was detected in the influent sample ((b) (9) -pre) at a concentration

of 1.2 micrograms per liter (µg/L). This value is below the Pennsylvania Act 2 Medium Specific Concentrations (MSCs) for nickel (100 µg/L).

Fourth Quarter Sampling – October 6, 2021

None of the parameters were detected in any sample, with two exceptions. First, the "influent" water sample was found to contain cis-1,2-DCE at a concentration of 0.71 micrograms per liter (µg/L). The cis-1,2-DCE detection in the "influent" water is consistent with historic results and well below (more than a magnitude below) its MCL (70 µg/L). Secondly, acetone was detected at a concentration of 17.2 µg/L, also in the influent sample. There is no MCL for acetone; Pennsylvania has a standard (Medium Specific Concentration, or MSC, of 31,000 µg/L). Acetone can often be a laboratory contaminant or "artifact" related to laboratory cleaning operations. Thus, a resampling event was scheduled to further assess the situation.

Fourth Quarter Sampling – November 23, 2021

Tetra Tech resampled the sample locations. The analytical results were similar with the detection of cis-1,2-DCE (0.57 µg/L) and acetone (17.1 µg/L) in the influent sample. Notably, acetone was also detected in a "trip blank" sample sent with the other water samples, at a concentration 3.5 µg/L. "Trip blank" blank samples are samples of water know to be clean that is transported with the other samples, and analyzed to evaluate if there may be possible outside interferences. The detection of the acetone in the trip blank suggests that the acetone detected in the influent sample may originate from a source other than the groundwater.

Fourth Quarter Sampling – December 16, 2021

Tetra Tech scheduled another round of sampling, for further evaluation. The homeowner had noted just prior to this sampling event that some plumbing work had been conducted in the area of the sediment filter, which is near the influent sample port. In addition to the three sampling locations described above, Tetra Tech collected water from an additional (fourth) sample location - from another sampling port that would represent water having passed through the filter and softener but not yet through the first carbon canister ("(b) (9)-PRE GAC").

As related to cis-1,2-DCE, the results (0.58 µg/L in the influent sample and 0.57 µg/L in the (b) (9)-PRE GAC sample) were consistent with the other results for this period.

As related to acetone, the results were also consistent (7.4 µg/L in the influent sample and 2.2 µg/L in the (b) (9) PRE GAC sample). Notable, it was again detected in the trip blank (5 µg/L).

Summary

With the exception of the results for acetone, these results are consistent with past analysis on the water samples.

The lack of detection of organic compounds in the "midfluent" and "post-treatment" samples suggests that the carbon treatment system is operating effectively.

With regard to acetone, as mentioned, the detected amounts are very far below the Pennsylvania MSC of 31,000 µg/L. Possible root causes related to the recent detections include:

- The laboratory analytical method being used for the sample was changed during this period to EPA Method 524 (for drinking water). The previous detection limits reported for acetone for this location was 10 µg/L (via EPA Method 8260); with the new method, the detection limits have been 2 µg/L. Thus, acetone may have been present before but not detected using the previous method.
- Acetone is a solvent. Some plumbing glues, as well as other household chemicals, contain acetone. The presence of some of these materials that may be present in the area of the sampling ports may be the source of the acetone detected in the samples.

7.0 MONITORING PROGRAM EVALUATION

This section presents a statistical evaluation of the groundwater monitoring data, an evaluation of data against shutdown criteria, and an assessment of the current monitoring well placement.

Section 7.1 presents a statistical evaluation of groundwater monitoring data is required by the 2008 COA. The 1994 O&M Plan (part of the COA, Exhibit B) and subsequent 2010 O&M Plan specify the monitoring wells and recovery points established as points of compliance. Satisfactory completion of the groundwater remediation is to be determined at these point of compliance locations: Wells 7D, 10D, 12D, AW-4 and GW-9008, and the Spring 1 recovery point. Cleanup goals at the points of compliance are Maximum Contaminant Levels (MCLs).

As far back as 2011, the Mann-Kendall statistical method was applied for assessment of mean concentrations and equilibrium (stability) or trend to meet the requirements of the COA. Given some drawbacks of the Mann-Kendall method and availability of more current and applicable methods, starting in 2020 the linear regression with Monte Carlo imputation of non-detects was applied instead.

Section 7.2 presents an evaluation of data against shutdown criteria. The O&M plan states it is likely that the concentrations of VOCs in ground water will reach an equilibrium level at which, regardless of the duration of pumping and treatment, no further reductions in constituent concentrations will be possible. These equilibrium concentrations may exceed the cleanup goals. The plan also states that geologic conditions make it possible for areas of the GE Facility to be remediated at different rates. To account for these possibilities, four criteria were approved by EPA in the July 1993 Corrective Measure Implementation Program Plan under which the corrective measure could be amended to: modify the cleanup goals, terminate operation of the ground water recovery and treatment system, or shut down selected recovery wells. These criteria are as follows, whereas GE would submit a petition that demonstrates that one or more have been met.

1. If concentrations of GE Facility-related monitoring parameters in any recovery well are less than the cleanup goals for those VOCs for three consecutive sampling rounds, then that recovery well may be shutdown.
2. If it is demonstrated that migration of GE Facility-related monitoring parameters above MCLs would not occur downgradient of a recovery well beyond the GE Facility property boundary due to the shutdown of that recovery well, then that recovery well may be shutdown.
3. If it is demonstrated that the source of VOCs to the ground water is not related to the GE Facility, then the GE Facility ground water recovery and treatment system may be shut down.
4. If, based on eight consecutive sampling events (4 years of monitoring), steady-state conditions (equilibrium concentrations) are confirmed by statistical analysis and GE Facility-related monitoring parameters are above cleanup goals at the points of compliance, the cleanup goals may be modified and the ground water recovery and treatment system may be shut down or selected ground water recovery wells may be shut down. In such an event, the final cleanup levels may be less stringent than the proposed cleanup goals.

Section 7.3 presents an assessment of the current monitoring well placement. According to Item 18 of the COA, GE shall, at least annually, evaluate if wells are still property located based on the groundwater quality data.

7.1 STATISTICAL EVALUATION OF VOC DATA

The results of the statistical analysis are detailed in **Appendix F** and a summary follows below.

The statistical analysis was applied for the last ten years of groundwater quality results (through October 2021) for VOCs at the compliance points, recovery wells, and select monitoring wells. As a note, seven VOCs (TCE, PCE,

benzene, 1,1,1-trichloroethane [TCA], 1,2-DCE, 1,1-DCE, and vinyl chloride) were previously evaluated through 2003 (in accordance with the Final Decision and response to comments). Based on the approved Class I Permit Modification, benzene, 1,1,1-TCA, and 1,1-DCE were removed from the monitoring program and therefore not statistically evaluated thereafter. The current statistical evaluation of the remaining four VOCs – PCE, TCE, 1,2-DCE, and vinyl chloride — is as follows.

As described in **Appendix F**, the statistical analysis generated confidence interval (CI) bands for each well-constituent pair using sampling data for the past 10 years. A linear trend line is first fit to the data, then a confidence band is constructed around the trend line. Tetra Tech then compared the CI band for each constituent against respective cleanup goals (MCLs). The comparisons of the CI bands against MCLs for the well-constituent pairs over this time frame are summarized in **Table 9** and discussed below.

Table 9 also summarizes the results of the trend analysis detailed in **Appendix F**. A summary of the statistical evaluation results is presented below by well type (compliance points, recovery points, and other wells).

Compliance Points

CI bands are less than the MCL for all but the following:

- GW-9008: cis-1,2-DCE, TCE, VC
- Spring 1: TCE

Each of the well-constituent pair trends were stable or decreasing, except for cis-1,2-DCE at Spring 1 (increasing).

Recovery Points

Though not currently an active recovery well, well 5 will continue to be discussed with active recovery wells as in previous reports.

CI bands for at least one constituent exceeded the MCL for all locations. MCL exceedances are as follows:

- GW-9001: TCE; VC
- GW-9006: cis-1,2-DCE, PCE
- GW-9020: cis-1,2-DCE
- Well 5: VC
- Well 14: cis-1,2-DCE; VC
- Well 18: cis-1,2-DCE; TCE; PCE
- Spring 1: TCE

Each of the well-constituent pair trends were stable or decreasing, except for except for:

- Spring 1 (cis-1,2-DCE increasing);
- GW-9006 (cis-1,2-DCE increasing);
- Well 18 (cis-1,2-DCE increasing); and
- Well 14 (PCE increasing).

Notably, recovery well GW-9020 came into operation in October 2020, so this location has a smaller data set than other wells.

Other Wells

For the other wells evaluated (Table 9), the CI bands were less than the MCL at all wells, except GW-9004 (cis-1,2-DCE, TCE, and VC).

The trend estimates were either stable or decreasing in all cases.

7.2 SHUTDOWN CRITERIA ASSESSMENT

Shutdown criteria 1 through 4 are listed in Section 7.0

With respect to Criterion 1, concentrations of at least one regulated constituent exceeded cleanup goals in each of the recovery points over the last three sampling rounds.

With regard to criterion number 4, statistical evaluations of VOC datasets for compliance points show each of the well-constituent pair trends were stable or decreasing, except for cis-1,2-DCE at the Spring 1 recovery point.

7.3 MONITORING WELL PLACEMENT

The analytical data presented in this report indicate that the monitoring well placement is adequate to assess the groundwater quality at the site and to evaluate changes in groundwater quality caused by operation of the groundwater recovery wells as designed. Monitoring wells sampled at the site are situated within the area of contaminated groundwater and are also located downgradient from the groundwater recovery wells as well as at the extent of well influence, providing sufficient monitoring of the hydraulic influence of the recovery system. A modification to the current number of monitoring wells sampled at the site under the current recovery well operation is not considered necessary at this time as the recovery system continues to meet the remedial objective to contain any further offsite migration of contaminants.

8.0 ANTICIPATED 2022 SAMPLING AND FIELD ACTIVITIES

8.1 GROUNDWATER AND SURFACE WATER SAMPLING AND ANALYSIS

The semi-annual and annual sampling program will continue in 2022 consistent with the SAP. A summary of the groundwater sampling program schedule for 2022, reflecting semi-annual and annual sampling, is provided in **Table 10**. Semi-annual and annual reports will be prepared and submitted to the USEPA and PADEP to document the total VOC mass removal and the effectiveness of the GWRTS.

8.2 GROUNDWATER RECOVERY AND TREATMENT SYSTEM MAINTENANCE

Maintenance of the GWRTS will be conducted during 2022 in accordance with the Revised O&M Plan. Operations and maintenance activities anticipated for 2022 include:

- Bi-weekly site visits;
- Quarterly vapor treatment carbon change out events;
- Quarterly inspection and maintenance events; and
- Routine and non-routine maintenance of system equipment.

9.0 SUMMARY AND CONCLUSIONS

The results and conclusions related to GWRTS O&M, sampling data (October 2019), and performance are summarized below.

1. Regular O&M of the GWRTS proceeded as scheduled in 2022 in accordance with O&M plans and manuals.
2. During 2021, the groundwater treatment system continued to effectively remove VOCs (greater than 96 percent removal rate).
3. During 2021, an estimated 4,116,110 gallons of water were measured to have been treated and discharged. This volume represents a decrease in production of 1,135,227 gallons of water (-23 percent) from 2020, based on treatment plant effluent flow meter readings. The reduction in gallons recovered appears primarily related to downtimes for recovery wells 14 and GW-9020; the system overall ran more than 94 percent of the time.
4. The estimated mass of total VOCs removed during 2021 is 16.4 pounds. Compared to 2020, this is a decrease of 2.9 pounds. The decrease is believed to be attributable to decreased system flow and also the average influent concentration (481.7 µg/L in 2021 versus 544.3 µg/L in 2020.
5. Analytical results for groundwater samples collected during the Fall 2021 sampling event in the Upper Quarry Area are generally consistent with results from previous sampling events. The highest concentrations of VOCs were detected in groundwater from former recovery well 5 located on the downgradient edge of the former quarry.
6. The highest TVOC in the Lower Lagoon Area was GW-9001 (1399.40 µg/L) (Table 7). The TVOC concentration is attributed primarily to TCE (944 µg/L) and cis-1,2-DCE (440 µg/L). The results remain lower than past averages. Historically, the highest TVOC concentrations in the Lower Lagoon Area often have been observed at recovery well GW-9001. Since recovery well GW-9020 was brought on line in October 2018, GW-9001 concentrations appear to have been decreasing. Recovery well GW-9020 had been constructed, by design, in close proximity to GW-9001, to counter what had been lower yields from GW-9001 over time. GW-9001 concentrations have decreased since GW-9020 was brought on line October 19, 2018. In 2021, they again increased in the fourth quarter, perhaps due to the downtime of the nearby recovery well GW-9020 pump
7. For compliance wells, statistical evaluations of VOC datasets show each of the well-constituent pair trends were stable or decreasing, except for cis-1,2-DCE at the Spring 1 recovery point.
8. For recovery wells, trend estimates were either stable or decreasing in all cases, except for these well-constituent pairs: cis-1,2-DCE at GW-9006, Well 18, and the Spring 1 recovery point and PCE at Well 14.
9. The configuration of the potentiometric surface and the hydraulic gradient observed in the shallow bedrock aquifer during 2021 are consistent with previous findings. Shallow groundwater flows to the east-southeast.
10. The configuration of the potentiometric surface and hydraulic gradients observed in the deep bedrock aquifer during 2021 is mostly consistent with previous findings. Deep bedrock groundwater flows to the east-southeast.
11. The recovery system continues to meet the remedial objective to contain any further offsite migration of contaminants.

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TABLES

Table 1
Monthly Totals of Treated Water Discharged - 2021
GE Lancaster Facility Annual Report
Lancaster, PA

Month	Volume in Gallons (monthly)	Volume in Gallons* (quarterly)
January	342,366	
February	270,908	
March	321,890	935,164
April	381,906	
May	368,662	
June	247,604	998,172
July	303,808	
August	365,524	
September	371,580	1,040,912
October	325,070	
November	491,572	
December	325,220	1,141,862
	Annual Total Gallons	**4,116,110**

* Based on treatment plan effluent flow meter readings

Table 2
Summary of Analytical Results for Total Volatile Organic Compounds in Influent/Effluent Samples - 2021
GE Lancaster Facility Annual Report
Lancaster, PA

Sample Period	Influent TVOCs (µg/L)	Effluent TVOCs (µg/L)	Removal (%)	Mass of TVOCs Removed (pounds)
1st Quarter 2021	553.8	21.4	96.1%	4.3
2nd Quarter 2021	489.8	< 1.0	99.9%	4.1
3rd Quarter 2021	507.5	3.7	99.3%	4.4
4th Quarter 2021	375.6	1.9	99.5%	3.6
2021 Average TVOCs:	**481.7**	**2021 Total Pounds Removed:**		**16.4**

Notes:

First quarter values are based on average of three sampling events - 1/13/21 (36.3 µg/L), 2/12/21 (6.4 µg/L), and 3/1/21 (ND). Extra sampling events were done due to address detections in effluent in December 2020, and to evalute effectiveness of subsequent adjustments and maintenance done (primarily new gaskets on air stripper door and trays) to address exceedances.

µg/L - micrograms per liter

TVOCs - total volatile organic compounds

BLOQ - below limits of quantitation

Mass removed (pounds) = (concentration µg/L) x (3.8 L/gal) x (g/10^6µg) x (lb/454 g) x (total gallons treated)

J: Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit

Table 3
Mass of VOCs Removed 1996 - 2021
GE Lancaster Facility Annual Report
Lancaster, PA

Sample Period	Influent TVOCs* (µg//L)	Estimated Mass of TVOCs Removed (pounds)	Gallons Treated	Mass Removed Per Million Gallons Treated	Cumulative Mass Removed (pounds)
1Qtr 96	713	19.0	3,177,600	5.97	19.0
2Qtr 96	614	15.0	2,927,400	5.14	34.0
3Qtr 96	1410	24.4	2,066,800	11.80	58.4
4Qtr 96	660	16.6	3,004,200	5.52	75.0
1Qtr 97	544	15.9	3,501,500	4.55	90.9
2Qtr 97	624	13.1	2,507,200	5.22	104.0
3Qtr 97	524	8.4	1,921,900	4.39	112.5
4Qtr 97	503	9.2	2,181,300	4.21	121.6
1Qtr 98	414	9.6	2,775,400	3.47	131.3
2Qtr 98	557	9.2	1,973,500	4.66	140.5
3Qtr 98	293	4.3	1,738,100	2.45	144.7
4Qtr 98	361	5.8	1,908,800	3.02	150.5
1Qtr 99	279	5.2	2,244,200	2.34	155.7
2Qtr 99	352	5.6	1,891,500	2.94	161.3
3Qtr 99	292	3.8	1,543,500	2.45	165.1
4Qtr 99	329	5.1	1,841,600	2.75	170.1
1Qtr 00	366	7.6	2,492,600	3.07	177.8
2Qtr 00	965	18.0	2,229,600	8.07	195.8
3Qtr 00	430	9.1	2,534,700	3.60	204.9
4Qtr 00	811	12.8	1,883,400	6.79	217.7
1Qtr 01	1433	19.7	1,644,090	11.99	237.4
2Qtr 01	880	16.0	2,173,410	7.37	253.4
3Qtr 01	630	7.5	1,421,830	5.27	260.9
4Qtr 01	810	6.9	1,023,110	6.78	267.9
1Qtr 02	1570	11.6	885,800	13.14	279.5
2Qtr 02	708	8.5	1,428,000	5.92	288.0
3Qtr 02	701	7.0	1,194,500	5.86	295.0
4Qtr 02	459	8.6	2,246,600	3.84	303.6
1Qtr 03	349	7.7	2,631,100	2.92	311.3
2Qtr 03	363	6.5	2,140,300	3.04	317.8
3Qtr 03*	468	7.6	1,930,200	3.91	325.3
4Qtr 03	614	8.0	1,561,300	5.14	333.3
1Qtr 04	141	2.9	2,472,570	1.18	336.3
2Qtr 04	322	5.4	1,988,630	2.69	341.6
3Qtr 04	296	3.1	1,261,600	2.47	344.7
4Qtr 04	243	3.2	1,551,200	2.04	347.9
1Qtr 05	183	3.2	2,057,900	1.54	351.1
2Qtr 05	962	14.9	1,854,300	8.05	366.0
3Qtr 05	251	2.8	1,346,800	2.10	368.8
4Qtr 05	195	3.0	1,811,100	1.63	371.8
1Qtr 06	166	2.8	1,979,700	1.39	374.5
2Qtr 06	195	2.7	1,672,000	1.63	377.3
3Qtr 06	200	2.4	1,447,900	1.67	379.7
4Qtr 06	156	2.2	1,724,107	1.30	381.9

Table 3
Mass of VOCs Removed 1996 - 2021
GE Lancaster Facility Annual Report
Lancaster, PA

Sample Period	Influent TVOCs* (µg//L)	Estimated Mass of TVOCs Removed (pounds)	Gallons Treated	Mass Removed Per Million Gallons Treated	Cumulative Mass Removed (pounds)
1Qtr 07	179	2.8	1,861,300	1.50	384.7
2Qtr 07	182	1.7	1,127,280	1.53	386.4
3Qtr 07	541	5.8	1,276,600	4.53	392.2
4Qtr 07	486	6.2	1,524,500	4.07	398.4
1Qtr 08	472	6.3	1,584,700	3.95	404.7
2Qtr 08	523	6.7	1,528,400	4.38	411.4
3Otr 08	687	6.2	1,086,800	5.75	417.6
4Qtr 08	824	9.4	1,355,300	6.90	427.0
1Otr 09	517	5.8	1,340,200	4.33	432.8
2Qtr 09	502	4.0	957,884	4.20	436.8
3Qtr 09	387	5.1	1,577,449	3.24	441.9
4Qtr 09	405	5.9	1,755,830	3.39	447.9
1Otr 10	370	5.5	1,790,881	3.10	453.4
2Qtr 10	490	5.3	1,283,245	4.10	458.7
3Qtr 10	481	4.7	1,159,973	4.03	463.3
4Qtr 10	230	2.6	1,327,807	1.93	465.9
1Otr 11	239	3.1	1,568,657	2.00	469.0
2Qtr 11	346	5.1	1,759,536	2.90	474.1
3Qtr 11	524	6.9	1,573,280	4.39	481.0
4Qtr 11	434	5.9	1,622,054	3.63	486.9
1Otr 12	446	5.2	1,395,636	3.74	492.1
2Qtr 12	428	4.1	1,131,782	3.58	496.2
3Qtr 12	708	5.7	963,388	5.93	501.9
4Qtr 12	384	4.5	1,394,156	3.22	506.4
1Otr 13	348	4.6	1,587,292	2.91	511.0
2Qtr 13	439	4.5	1,221,054	3.67	515.5
3Otr 13	385	3.3	1,039,938	3.22	518.8
4Qtr 13	464	5.9	1,510,755	3.88	524.7
1Otr 14	308	4.1	1,597,335	2.58	528.8
2Qtr 14	298	4.6	1,839,840	2.50	533.4
3Otr 14	490	4.5	1,091,010	4.10	537.9
4Qtr 14	437	4.9	1,329,146	3.66	542.7
1Otr 15	482	4.7	1,156,392	4.04	547.4
2Qtr 15	589	5.1	1,039,998	4.93	552.5
3Qtr 15	617	4.2	822,439	5.16	556.8
4Qtr 15	532	3.8	857,487	4.45	560.6
1Qtr 16	411	3.7	1,075,313	3.44	564.3
2Qtr 16	540	4.3	944,212	4.52	568.6
3Qtr 16	685	4.8	838,663	5.73	573.4
4Qtr 16	276	1.7	744,627	2.31	575.1
1Qtr 17	593	2.9	582,484	4.96	578.0
2Qtr 17	574	4.0	822,343	4.81	581.9
3Qtr 17	505	3.0	704,829	4.23	584.9
4Qtr 17	213	0.9	495,884	1.78	585.8

Table 3
Mass of VOCs Removed 1996 - 2021
GE Lancaster Facility Annual Report
Lancaster, PA

Sample Period	Influent TVOCs* (µg//L)	Estimated Mass of TVOCs Removed (pounds)	Gallons Treated	Mass Removed Per Million Gallons Treated	Cumulative Mass Removed (pounds)
1Qtr 18	559	3.0	634,374	4.73	588.8
2Qtr 18	654	3.3	595,408	5.54	592.1
3Qtr 18	675	3.9	689,248	5.66	596.0
4Qtr 18	496	4.0	956,148	4.18	600.0
1Qtr 19	563	5.1	1,078,024	4.71	605.1
2Qtr 19	651	3.8	700,532	5.45	608.9
3Qtr 19	401	2.8	826,728	3.36	611.7
4Qtr 19	554	6.2	1,338,754	4.64	617.9
1Qtr20	485	3.6	888,072	4.05	621.5
2Qtr 20	569	5.7	1,188,698	4.76	627.1
3Qtr20	548	5.2	1,131,116	4.58	632.3
4Qtr 20	575	5.1	1,053,862	4.81	637.4
1Qtr21	554	4.3	935,164	4.63	641.7
2Qtr 21	490	4.1	998,172	4.10	645.8
3Qtr21	508	4.4	1,040,912	4.25	650.2
4Qtr 21	376	3.6	1,141,862	3.14	653.8
Annual Summaries:					
2021	482	16.4	4,116,110	3.99	653.8
2020	544	19.5	4,261,748	4.58	637.4
2019	542	17.9	3,944,038	4.54	617.9
2018	596	14.2	2,875,178	4.94	600.0
2017	471	10.3	2,605,540	3.94	585.8
2016	478	14.4	3,602,815	4.00	575.1
2015	555	18.0	3,876,316	4.64	560.6
2014	383	18.8	5,857,331	3.21	542.7
2013	409	18.3	5,359,039	3.42	524.7
2012	492	20.1	4,884,962	4.11	506.4
2011	386	21.1	6,523,527	3.23	486.9
2010	393	18.3	5,561,906	3.29	465.9
2009	453	21.3	5,631,363	3.79	447.9
2008	627	29.1	5,555,200	5.24	427.0
2007	347	16.8	5,789,680	2.91	398.4
2006	179	10.2	6,823,707	1.50	381.9
2005	398	23.5	7,070,100	3.33	371.8
2004	250	15.2	7,274,000	2.10	347.9
2003	448	31.0	8,262,900	3.75	333.3
2002	859	41.4	5,754,900	7.19	303.6
2001	938	49.2	6,262,440	7.85	267.9
2000	643	49.2	9,140,300	5.38	217.7
1999	313	19.7	7,520,800	2.62	170.1
1998	406	28.5	8,395,800	3.40	150.5
1997	549	46.4	10,111,900	4.59	121.6
1996	849	79.4	11,176,000	7.11	75.0

Notes:
* Annual influent concentration is the average result of four quarterly samples.
µg/L: Micrograms per liter
TVOCs: Total Volatile Organic Compounds
BLOQ: Below Limiations of Quantitation
Mass removed (pounds) = Concentration: (µg/L) (3.8 L/gal) (g/10^6 µg) (lb/454) (total gallons treated)

Table 4
Water Level and Evacuation Method Data - Fourth Quarter 2021
GE Lancaster Facility Semi-Annual Report
Lancaster, PA

Well	Ground Elevation (feet above mean sea level)	Measuring Point Elevation (feet above mean sea level)	Depth to Water (feet below measuring point)	Water-Level Elevation (feet above mean sea level)	Measuring Point	Evacuation Method	Sample Method	Shallow or Deep Aquifer	Purge Water Disposition	Recovery Well Pumping* (Y/N)
AW-1	269.13	271.10	5.39	265.71	TOPC	not sampled	not sampled	shallow	not sampled	N/A
AW-2S	269.87	271.10	9.11	261.99	TOPC	not sampled	not sampled	shallow	not sampled	N/A
AW-2D	269.86	271.28	8.59	262.69	TOPC	not sampled	not sampled	deep	not sampled	N/A
AW-3	272.50	273.51	19.81	253.70	TOSC	permanent submersible	poly bailer	shallow	ground	N/A
AW-4	272.49	273.66	7.65	266.01	TOSC	portable submersible	poly bailer	shallow	plant	N/A
1	333.14	334.33	31.41	302.92	TOPC	not sampled	not sampled	shallow	not sampled	N/A
2	272.02	274.35	8.64	265.71	TOPC	not sampled	not sampled	shallow	not sampled	N/A
3S	272.01	272.41	5.56	266.85	TOPC	not sampled	not sampled	shallow	not sampled	N/A
3D	272.85	275.05	Artesian	Artesian	TOSC	not sampled	not sampled	deep	not sampled	N/A
4	286.18	287.78	13.36	274.42	TOPC	not sampled	not sampled	shallow	not sampled	N/A
5	316.90	319.90	17.90	302.00	TOPC	permanent submersible	poly bailer	shallow	plant	N/A
6	321.65	322.89	20.84	302.05	TOPC	portable submersible	poly bailer	shallow	ground	N/A
7S	298.21	300.12	13.04	287.08	TOPC	not sampled	not sampled	shallow	not sampled	N/A
7D	297.27	297.45	18.50	278.95	TOSC	portable submersible	poly bailer	deep	ground	N/A
8	334.54	336.13	19.79	316.34	TOPC	not sampled	not sampled	shallow	not sampled	N/A
9S	281.07	282.73	17.99	264.74	TOPC	not sampled	not sampled	shallow	not sampled	N/A
9D	280.78	282.33	13.62	268.71	TOPC	not sampled	not sampled	deep	not sampled	N/A
10S	293.99	295.70	15.05	280.65	TOPC	not sampled	not sampled	shallow	not sampled	N/A
10D	294.16	296.13	15.71	280.42	TOPC	portable submersible	poly bailer	deep	ground	N/A
11S	311.03	312.84	82.10	230.74	TOSC	permanent submersible	poly bailer	shallow	plant	N/A
11D	310.43	311.67	24.52	287.15	TOSC	not sampled	not sampled	deep	not sampled	N/A
12S	288.04	289.09	2.58	286.51	TOSC	not sampled	not sampled	shallow	not sampled	N/A
12D	287.61	289.61	21.32	268.29	TOSC	permanent submersible	poly bailer	deep	ground	N/A
13	320.47	321.78	24.67	297.11	TOSC	not sampled	not sampled	deep	not sampled	N/A
14	316.01	317.25	158.00	159.25	TOSC	permanent submersible	sampling port	deep	plant (rec. well)	Yes
15	311.83	313.85	11.51	302.34	TOSC	portable submersible	poly bailer	shallow	ground	N/A
16	313.02	315.02	12.81	302.21	TOSC	not sampled	not sampled	shallow	not sampled	N/A
18*	264.04	265.96	Not Acc. - New Lid	Not Acc. - New Lid	TOSC	permanent submersible	sampling port	deep	plant (rec. well)	Yes
GW-9001	272.71	274.49	195.05	79.44	TOOSC	permanent submersible	sampling port	deep	plant (rec. well)	No
GW-9002	290.86	292.62	21.61	271.01	TOOSC	not sampled	not sampled	deep	not sampled	N/A
GW-9004	284.93	287.03	34.41	252.62	TOOSC	permanent submersible	poly bailer	deep	plant	N/A
GW-9006*	272.70	268.53	272.32	-3.79	TOOSC	permanent submersible	sampling port	deep	plant (rec. well)	Yes
GW-9007	295.85	295.74	35.31	260.43	TOSC	permanent submersible	poly bailer	deep	ground	N/A
GW-9008	257.77	257.86	1.90	255.96	TOSC	permanent submersible	poly bailer	deep	plant	N/A
GW-9020*	273.72	275.05	NM	NM	TOSC	permanent submersible	sampling port	deep	plant (rec. well)	Yes
BW-1	340.64	342.41	23.48	318.93	TOSC	not sampled	not sampled	deep	not sampled	N/A
BW-2S	319.85	322.09	20.88	301.21	TOSC	not sampled	not sampled	shallow	not sampled	N/A
BW-2D	319.80	322.03	23.16	298.87	TOSC	not sampled	not sampled	deep	not sampled	N/A
BW-3	324.65	325.61	13.69	311.92	TOSC	not sampled	not sampled	shallow	not sampled	N/A
BW-4S	320.62	323.11	12.36	310.75	TOSC	not sampled	not sampled	shallow	not sampled	N/A
BW-4D	321.09	323.28	12.50	310.78	TOSC	not sampled	not sampled	deep	not sampled	N/A
BW-5	321.85	321.52	NM	NM	TOSC	not sampled	not sampled	shallow	not sampled	N/A
BW-6	321.48	323.96	15.21	308.75	TOSC	not sampled	not sampled	shallow	not sampled	N/A
BW-9	330.25	332.60	18.48	314.12	TOSC	not sampled	not sampled	deep	not sampled	N/A
IP-01	274.23	276.25	NM	NM	TOSC	not sampled	not sampled	deep	not sampled	N/A
IP-02	272.72	275.26	NM	NM	TOSC	not sampled	not sampled	deep	not sampled	N/A
SW-1	291.47	291.47	10.51	280.96	from bridge	not sampled	not sampled	SW	not sampled	N/A
SW-2	NA	266.36	4.28	262.08	from bridge	not sampled	not sampled	SW	not sampled	N/A
SW-9002	NA	262.73	5.48	257.25	from bridge	not sampled	not sampled	SW	not sampled	N/A
SW-9003	NA	260.25	Not Acc.	Not Acc.	from bridge	not sampled	not sampled	SW	not sampled	N/A
Spring-1	NA	NA	3.64	NA	TOV	permanent submersible	sampling port	shallow	plant (rec. point)	No

Notes:

*** There were no variances to the criteria relevant to discharging to ground surface:**
Groundwater evacuated from wells can be discharged directly to the ground surface provided:
1. The concentrations of total VOCs (TVOCs) in the three previously collected ground water samples are less than 100 micrograms per liter (µg/L) and
2. Individual constituents are at concentrations that do not exceed Federal or Pennsylvania primary and secondary drinking water standards.

Measuring Poing Elevations surveyed on 6/30/2003 by Rettew Associates
TOPC = Top of PVC casing
TOSC = Top of steel casing
TOOSC = Top of outer steel casing
TOV = Top of vault
NA = Not applicable
NM = Not measured; well BW-5 (on Burle Industries property) may possibly be abandoned and has not been gauged in several years
NS = Not sampled
SW = Surface water
*= At time of gauging depth to water

Table 5
Field Parameter Measurements - Fourth Quarter 2021
GE Lancaster Annual Report
Lancaster, PA

Sample Point	Date	Sample Time	pH (s.u.)	Specific Conductivity (mS/cm)	Temperature (°C)	Color/Comments
5	10/6/2021	12:15	6.85	0.931	16.47	Clear / Colorless
6 (1)	10/6/2021	14:40	7.01	0.993	15.30	Clear / Colorless
7D (1)	10/7/2021	10:40	7.38	1.800	15.35	Clear / Colorless
10D (1)	10/7/2021	12:10	7.07	0.949	14.29	Clear / Colorless
11S (1)	10/7/2021	13:00	8.2	0.743	16.71	Black
12D	10/7/2021	14:45	7.52	0.803	15.59	Light Brown
14 (2)	10/7/2021	15:00	7.79	1.200	17.03	Clear / Colorless
1230	10/7/2021	15:35	7.89	1.270	13.90	Clear / Colorless
18 (2)	10/7/2021	14:10	7.76	1.350	17.40	Clear / Colorless
AW-3	10/6/2021	15:00	7.44	1.490	18.49	Clear / Colorless
AW-4 (1)	10/7/2021	11:45	7.67	1.970	16.83	Clear / Colorless
GW-9001 (2)	10/7/2021	12:45	14.02	1.720	14.02	Clear / Colorless
GW-9004	10/6/2021	12:45	7.61	1.270	17.98	Clear / Colorless
GW-9006 (2)	10/7/2021	14:20	7.69	1.670	19.17	Clear / Colorless
GW-9007	10/5/2021	14:00	7.09	0.709	15.24	Clear / Colorless
GW-9008 (1)	10/5/2021	13:30	7.51	0.773	14.50	Clear / Colorless
GW-9020 (2)	10/7/2021	12:30	7.19	1.592	14.32	Clear / Colorless
Spring 1 (1)(2)	10/7/2021	11:00	7.72	1.720	18.55	Clear / Colorless

Notes:
(1) - Denotes a Point of Compliance Monitoring Well or Spring
(2) - Denotes a Recovery Well or Spring. Water Quality Parameter taken from a grab sample while pump was running. All other monitoring well water quality parameters were taken during the third volume of well purging.
Water Quality Parameters measured with YSI Model 556 multiparameter instrument.
mS/cm = Millisiemens per centimeter
s.u. = Standard units
°C =Degrees Celsius

Table 6
Water Level Elevation Data - 2021
GE Lancaster Annual Report
Lancaster, PA

Well Location	Water Level Elevation 1st Quarter	Water Level Elevation 2nd Quarter	Water Level Elevation 3rd Quarter	Water Level Elevation 4th Quarter
AW-1	NM	5.40	NM	5.39
AW-2S	NM	8.90	NM	9.11
AW-2D	NM	8.66	NM	8.59
AW-3	NM	13.79	NM	19.81
AW-4	NM	7.55	NM	7.65
1	NM	30.12	NM	31.41
2	NM	8.25	NM	8.64
3S	NM	5.30	NM	5.56
3D	NM	NA - Artesian	NM	NA - Artesian
4	NM	12.03	NM	13.36
5	NM	17.10	NM	17.90
6	NM	19.80	NM	20.84
7S	NM	11.69	NM	13.04
7D	NM	16.88	NM	18.50
8	NM	18.30	NM	19.79
9S	NM	29.30	NM	17.99
9D	NM	44.20	NM	13.62
10S	NM	12.94	NM	15.05
10D	NM	13.35	NM	15.71
11S	NM	45.95	NM	82.10
11D	NM	24.50	NM	24.52
12S	NM	18.56	NM	2.58
12D	NM	1.65	NM	21.32
13	NM	21.72	NM	24.67
14	NM	58.10	NM	158.00
15	NM	10.94	NM	11.51
16	NM	12.05	NM	12.81
18	NM	NM	NM	Not Acc. - New Lid
GW-9001	NM	197.50	NM	195.05
GW-9002	NM	20.99	NM	21.61
GW-9004	NM	14.49	NM	34.41
GW-9006	NM	NM (>182)	NM	272.32
GW-9007	NM	36.15	NM	35.31
GW-9008	NM	1.02	NM	1.90
GW-9020*	NM	103.85	NM	NM
BW-1	NM	22.58	NM	23.48
BW-2S	NM	20.62	NM	20.88
BW-2D	NM	22.52	NM	23.16
BW-3	NM	13.32	NM	13.67
BW-4S	NM	NM	NM	12.36
BW-4D	NM	12.23	NM	12.50
BW-5	NM	NM	NM	NM
BW-6	NM	14.29	NM	15.21
BW-9	NM	17.59	NM	18.48
IP-01	NM	32.20	NM	NM
IP-02	NM	13.13	NM	NM
SW-1	NM	10.04	NM	10.51
SW-2	NM	4.10	NM	4.28
SW-9002	NM	5.02	NM	5.48
SW-9003	NM	7.72	NM	Not Acc.
Spring-1	NM	NM	NM	3.64

Water Levels in 2nd Quarter were measured on April 12, 2021.
Water Levels in 4th Quarter were measured on October 4, 2021.

Table 7
Summary of Analytical Results for Selected VOCs and TVOCs in Water Samples –
October 1998 – October 2021
GE Lancaster Annual Report
Lancaster, PA

MCL (µg/L):		2	70 cis, 100 trans	5	5	
Location	**Sample Date**	**Vinyl Chloride**	**1,2-dichloroethene (c/t)**	**trichloroethene**	**tetrachloroethene**	**TVOCs***
GW-9001	Oct-98	<20 (<20)	280 (220)	1500 (1400)	<20 (<20)	1780 (1620)
GW-9001	Apr-99	<20	300	1500	<20	1800.0
GW-9001	Oct-99	<50	340	1900	<50	2240.0
GW-9001	Jan-00	<20	410	1600	<20	2010.0
GW-9001	Apr-00	<50	300	2100	<50	2400.0
GW-9001	Jul-00	<50	230	1900	<50	2130.0
GW-9001	Oct-00	<50	240	1900	<50	2140.0
GW-9001	Apr-01	<20	190	1300	<20	1490.0
GW-9001	Oct-01	<20	160	1300	<20	1460.0
GW-9001	Apr-02	<4.0	180	1600	4.6J	1784.6
GW-9001	Oct-02	<10	180	1500	3	1683.0
GW-9001	Apr-03	<10	160	1500	4.0J	1664.0
GW-9001	Oct-03	73 (69)	1507.8J (1507.7J)	990 (990)	<3.0 (<3.0)	2571 (2567)
GW-9001	Apr-04	63	996.4J	580	1.2J	1640.6
GW-9001	Oct-04	150	1200	280	<3.0	1630.0
GW-9001	Apr-05	290	1700	620	<3.0	2610.0
GW-9001	Oct-05	180	1206.8J	1200	<1.5	2586.8
GW-9001	Apr-06	310	1600	1200	<50	3110.0
GW-9001	Oct-06	180	920	1100	<25	2200.0
GW-9001	Apr-07	220 (210)	1100 (1000)	1200 (1100)	<25 (<25)	2520 (2323)
GW-9001	Oct-07	99	1425	1000	<50	2549.0
GW-9001	Apr-08	230	1203.8	1400	3.1	2836.9
GW-9001	Oct-08	35	1100	1500	< 10	2635.0
GW-9001	Apr-09	23 J	970	1400	< 20	2393.0
GW-9001	Oct-09	26	960	1500	<20	2486.0
GW-9001	Apr-10	<20	1400	1700	<20	3100.0
GW-9001	Oct-10	66	1115	1600	<5.0	2781.0
GW-9001	Apr-11	15 (16)	1212 J (1106.8 J)	1700 (1700)	<5.0 (<5.0)	2927 (2822.8)
GW-9001	Oct-11	25	1300	2000	<5.0	3325.0
GW-9001	Apr-12	12	1300	2000	<10	3312.0
GW-9001	Oct-12	<10 (7.1)	1200 (1200)	2100 (2000)	<10 (<5)	3300 (3207.1)
GW-9001	Apr-13	8	1000	1800	<5.0	2808.0
GW-9001	Oct-13	5.6	1100	1800	<5.0	2905.6
GW-9001	Apr-14	<10	1200	2200	<10	3400.0
GW-9001	Oct-14	9.4	1430	2280J	<5.0	3737.8
GW-9001	Apr-15	7.9	1070 / 18.2	2980	4.8	4080.9
GW-9001	Oct-15	3.3	1450 (17.8)	2010	3.1	3484.2
GW-9001	Apr-16	51.4	1560 / 17.8	2800	3.3	4432.5
GW-9001	Oct-16	13.4	629 / 9.6	1360	3.7	2015.7
GW-9001	Apr-17	13.9 (18.5)	1070 (1150) / 6.7 (6.5)	2050 (1980)	3.1 (2.9)	3143.7 (3157.9)
GW-9001	Oct-17	4.4 (5.4)	1070 (950) / 15.2J (42.4J)	1890 (1830)	3.0 (3.6)	2982.6 (2831.4)
GW-9001	Apr-18	5.5 (16.1)	926 (1150) / 18.7 (16.0)	1730 (2020)	2.9 (3.0)	2683.2 (3206.1)
GW-9001	Oct-18	16.3 (15.9)	292 (287) / 1.5 (1.7)	229 (232)	<1.0 (<1.0)	538.8 (536.6)
GW-9001	May-19	43.9 (37.9)	996 (1030) / 5.2 (4.1)	1470 (1480)	3.3 (3.2)	2518.4 (2555.2)
GW-9001	Oct-19	2.2 (2.1)	89.3/ 0.92 J (88.9/ 0.79J)	119 (119)	<1.0 (<1.0)	212.42 (210.79)
GW-9001	Apr-20	18.8 (19.2)	895/ 3.6 (964 / 3.8)	1840 (1990)	2.7 (2.9)	2760.1 (2979.9)
GW-9001	Nov-20	0.45 J (<1.0)	82.8/ 0.93 J (81.0 / 0.91J)	110 (105)	<1.0 (<1.0)	194.18 (186.91)
GW-9001	Apr-21	<1.0	44.8 / 0.63 J (43.1 / 0.77 J)	64.6	<1.0	110.03 (108.47)
GW-9001	Oct-21	8.5	440 / 4.2	944	2.7	1399.40
GW-9004	Oct 98	<2.0	110	140	<2.0	250.0
GW-9004	Apr 99	<2.0 (<2.0)	110 (110)	110 (110)	<2.0 (<2.0)	220 (220)
GW-9004	Oct 99	<2.0	140	120	<2.0	260.0
GW-9004	Jan-00	<2.0	140	140	<2.0	280.0
GW-9004	Apr-00	<2.0	172.4	140	<2.0	312.4
GW-9004	Jul-00	<5.0	178	140	<5.0	318.0
GW-9004	Oct-00	<2.0	110	120	<2.0	230.0
GW-9004	Apr-01	<1.0	95	130	<1.0	225.0
GW-9004	Oct-01	<2.0 (<1.0)	122.1 (100)	79 (100)	<1.0 (<2.0)	201 (200)
GW-9004	Apr-02	1.7J	151.2J	130	<0.1	282.9
GW-9004	Oct-02	1.1J	152.8J	110	<0.3	263.9
GW-9004	Apr-03	1.5J	145.5	120	<0.3	267.0
GW-9004	Oct-03	1.8J	161	110	<0.3	272.8
GW-9004	Apr-04	1.8J	166.1	130	<0.3	297.9
GW-9004	Oct-04	4.0J	174.9J	130	<0.3	308.9
GW-9004	Apr-05	11	164	130	<0.1	305.0

Table 7
Summary of Analytical Results for Selected VOCs and TVOCs in Water Samples –
October 1998 – October 2021
GE Lancaster Annual Report
Lancaster, PA

MCL (µg/L):		2	70 cis, 100 trans	5	5	
Location	**Sample Date**	**Vinyl Chloride**	**1,2-dichloroethene (c/t)**	**trichloroethene**	**tetrachloroethene**	**TVOCs***
GW-9004	Oct-05	31	18	220	<0.3	269.0
GW-9004	Apr-06	25	332.8	150	<1.0	507.8
GW-9004	Oct-06	19	242.3L	170	<1.0	432.5
GW-9004	Apr-07	82	934.2	590	<1.0	1606.2
GW-9004	Oct-07	72 (77)	920 (927)	410 (420)	<25 (<5.0)	1414.5 (1426.5)
GW-9004	Apr-08	43	774	310	<1.0	1127.0
GW-9004	Oct-08	35	680	300	< 5	1015.0
GW-9004	Apr-09	33	652.5	220	< 1.0	905.5
GW-9004	Oct-09	25 (28)	500 (552.8)	180 (190)	<5.0 (<1.0)	705 (770.8)
GW-9004	Apr-10	21	467	160	<5.0	648.0
GW-9004	Oct-10	17	371.9	140	<1.0	529.0
GW-9004	Apr-11	13	365.9	110	<1.0	488.9
GW-9004	Oct-11	19	31.6	120	<1.0	170.6
GW-9004	Apr-12	16	390	120	<2.5	426.0
GW-9004	Oct-12	15	220	100	<2.5	335.0
GW-9004	Apr-13	11	221.6	64	<1.0	296.6
GW-9004	Oct-13	9.0	380	100	<2.5	489.0
GW-9004	Apr-14	13 (10)	300 (310)	83 (92)	<0.5 (<2.5)	398.1 (414.8)
GW-9004	Oct-14	16.9	435	107	<1.0	561.2
GW-9004	Apr-15	15.4	251	84.2	<1.0	350.6
GW-9004	Oct-15	7.8	310 / 2.3	84.8	<1.0	404.9
GW-9004	Apr-16	20.9	301 / 2.1	93.2	<1.0	417.2
GW-9004	Oct-16	14.6	218 / 1.3	57.9	<1.0	291.8
GW-9004	Apr-17	16.6	327 / 2.1	78	<1.0	423.7
GW-9004	Oct-17	12.3	350 / 6.3	72.5	<1.0	441.1
GW-9004	Apr-18	24.3	159 / 3.5	37.4	<1.0	224.2
GW-9004	Nov-18	8.0	240 / 1.5	59.2	<1.0	308.7
GW-9004	May-19	12.5	285 / 1.6	57.9	<1.0	357.0
GW-9004	Oct-19	11.0	244/ 1.2	49	<1.1	306.3
GW-9004	Apr-20	6.6	270 / 1.7	57.5	<1.0	335.8
GW-9004	Nov-20	6.2	266 / 1.5	45.9	<1.0	319.6
GW-9004	Apr-21	4.9	221 / 2.3	47.3	<1.0	275.5
GW-9004	Oct-21	6.6	239 / 1.6	34.9	<1.0	282.1
GW-9006	Oct 98	<5.0	100	840	6.1	946.1
GW-9006	Apr 99	<10.0	100	730	<10.0	830.0
GW-9006	Oct 99	<10.0	100	730	<10.0	830.0
GW-9006	Jan-00	<10.0	210	820	12	1042.0
GW-9006	Apr-00	<20.0	170	820	<20.0	990.0
GW-9006	Jul-00	<20.0	140	660	<20.0	800.0
GW-9006	Oct-00	<10.0	150	740	15	905.0
GW-9006	Apr-01	<10.0	120	570	12	702.0
GW-9006	Oct-01	<10.0	140	660	15	815.0
GW-9006	Apr-02	<2.0 (<2.0)	110 (120)	710 (720)	16 (19)	836 (859)
GW-9006	Oct-02	<2.0	130	690	18	838.0
GW-9006	Apr-03	<2.0	111.0J	650	23	784.0
GW-9006	Oct-03	<2.0	102.7J	590	21	713.7
GW-9006	Apr-04	<4.0	232.1J	1300	45	1577.1
GW-9006	Oct-04	<4.0	110	570	20J	700.0
GW-9006	Apr-05	<4.0	130	770	27	927.0
GW-9006	Oct-05	<4.0	140	740	31	911.0
GW-9006	Apr-06	<5.0 UL	140L	760L	30L	930 L
GW-9006	Oct-06	<10	130	700	26	856.0
GW-9006	Apr-07	<5.0	140	690	26	856.0
GW-9006	Oct-07	<10	200	880	29	1114.0
GW-9006	Apr-08	<1.0	188	750	28	966.0
GW-9006	Oct-08	<1.0	180	740	25	945.0
GW-9006	Apr-09	<1.0	181.3	690	28	899.3
GW-9006	Oct-09	<10	190	780	27	997.0
GW-9006	Apr-10	<5.0	120	380	20	520.0
GW-9006	Oct-10	<1.0	110	320	18	448.0
GW-9006	Apr-11	<1.0	181.8	780	25	987.0
GW-9006	Oct-11	<2.5	190	720	19	929.0
GW-9006	Apr-12	0.6	94	190	18	302.6
GW-9006	Oct-12	0.6	150	650	22	822.6
GW-9006	Apr-13	<1.0	161.3	700	21	882.3

Table 7
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Lancaster, PA

MCL (µg/L):		2	70 cis, 100 trans	5	5	
Location	**Sample Date**	**Vinyl Chloride**	**1,2-dichloroethene (c/t)**	**trichloroethene**	**tetrachloroethene**	**TVOCs***
GW-9006	Oct-13	<2.5	130	580	24	734.0
GW-9006	Apr-14	<2.5	130	590	25	745.0
GW-9006	Oct-14	<1.0	204	603	28.4	837.0
GW-9006	Apr-15	<1.0	169 / 4.1	710	33.3	916.4
GW-9006	Oct-15	---------- N O T S A M P L E D ----------				
GW-9006	Apr-16	1.3	163 / 1.5	646	30.5	842.3
GW-9006	Oct-16	<1.0	146 / 1.3	552	25.3	724.6
GW-9006	Apr-17	<1.0	156 / 1.7	558	26.3	742.0
GW-9006	Oct-17	0.49J	149 / 5.3	219	11.6	385.4
GW-9006	Apr-18	0.63J	209 /4.1	641	28.3	882.4
GW-9006	Oct-18	0.69J	171 / 1.6	576	24.4	773.7
GW-9006	May-19	0.78J	197 / 1.0	285	11.6	495.4
GW-9006	Oct-19	0.29 J	173/ 1.3	502	23.1	699.8
GW-9006	Apr-20	0.69 J	201 / 0.68 J	183	8.8	394.2
GW-9006	Nov-20	1.2	217 / 0.69 J	168	9.9	396.8
GW-9006	Apr-21	1.1	197 / 1.3	158	7.9	365.3
GW-9006	Oct-21	0.31 J	211 / 1.9	5.0 J	23.3	241.5
GW-9007	Oct-98	<1.0	<1.0	<1.0	<1.0	ND
GW-9007	Apr 99	<1.0	<1.0	<1.0	<1.0	ND
GW-9007	Oct 99	<1.0	<1.0	<1.0	<1.0	ND
GW-9007	Jan-00	<1.0	<1.0	<1.0	<1.0	ND
GW-9007	Apr-00	<1.0	<1.0	<1.0	<1.0	ND
GW-9007	Jul-00	<1.0	<1.0	<1.0	<1.0	ND
GW-9007	Oct-00	<1.0	<1.0	<1.0	<1.0	ND
GW-9007	Apr-01	<1.0	<1.0	<1.0	<1.0	ND
GW-9007	Oct-01	<1.0	<1.0	<1.0	<1.0	ND
GW-9007	Apr-02	<0.2	<0.2	<0.08	0.06J	0.1
GW-9007	Oct-02	<0.2	<0.2	<0.08	<0.06	ND
GW-9007	Apr-03	<0.2	<0.2	<0.08	<0.06	ND
GW-9007	Oct-03	<0.2	<0.2	<0.08	<0.06	ND
GW-9007	Apr-04	<0.2	<0.2	0.08J	0.1J	0.2
GW-9007	Oct-04	<0.2	<0.2	<0.08	0.07J	0.1
GW-9007	Apr-05	<0.2	<0.2	<0.08	0.07J	0.1
GW-9007	Oct-05	<0.2	<0.2	<0.08	0.1J	0.1
GW-9007	Apr-06	<1.0	<1.0	<1.0	<1.0	ND
GW-9007	Oct-06	<1.0	<1.0	<1.0	<1.0	ND
GW-9007	Apr-07	<1.0	<1.0	<1.0	<1.0	ND
GW-9007	Oct-07	<1.0	<1.0	<1.0	<1.0	ND
GW-9007	Apr-08	<1.0	<1.0	<1.0	<1.0	ND
GW-9007	Oct-08	<1.0	<1.0	<1.0	<1.0	ND
GW-9007	Apr-09	<1.0	<1.0	<1.0	<1.0	ND
GW-9007	Oct-09	<1.0	<1.0	<1.0	<1.0	ND
GW-9007	Apr-10	<1.0	<1.0	<1.0	<1.0	ND
GW-9007	Oct-10	<0.5	<0.5	<0.5	<0.5	ND
GW-9007	Oct-11	<0.5	<0.5	<0.5	<0.5	ND
GW-9007	Oct-12	<0.5	<0.5	<0.5	<0.5	ND
GW-9007	Oct-13	<0.5	<0.5	<0.5	<0.5	ND
GW-9007	Oct-14	<1.0	<1.0	<1.0	<1.0	ND
GW-9007	Oct-15	<1.0	<1.0	<1.0	<1.0	ND
GW-9007	Oct-15	<1.0	<1.0	<1.0	<1.0	ND
GW-9007	Oct-16	<1.0	<1.0	<1.0	<1.0	ND
GW-9007	Oct-17	<1.0	<1.0	<1.0	<1.0	ND
GW-9007	Oct-18	<1.0	<1.0	<1.0	<1.0	ND
GW-9007	Oct-19	<1.0	<1.0 / <1.0	<1.0	<1.0	ND
GW-9007	Nov-20	<1.0	<1.0 / <1.0	<1.0	<1.0	ND
GW-9007	Oct-21	<1.0	<1.0 / <1.0	<1.0	<1.0	ND
GW-9008	Oct 98	<2.0	120	130	<2.0	250.0
GW-9008	Apr 99	<2.0	120	120	<2.0	240.0
GW-9008	Oct 99	2.4	150	140	<1.0	292.4
GW-9008	Jan-00	<2.0	140	140	<2.0	280.0
GW-9008	Apr-00	<2.0	150	140	<2.0	290.0
GW-9008	Jul-00	2.3	130	130	<1.0	262.3
GW-9008	Oct-00	3.2	120	130	<1.0	253.2
GW-9008	Apr-01	<2.0	130	120	<2.0	250.0
GW-9008	Oct-01	<2.0	119.3	110	<2.0	229.3

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Location	**Sample Date**	**Vinyl Chloride**	**1,2-dichloroethene (c/t)**	**trichloroethene**	**tetrachloroethene**	**TVOCs***
GW-9008	Apr-02	1.3J	112	110	<0.1	223.3
GW-9008	Oct-02	0.9J	143	120	<0.1	263.9
GW-9008	Apr-03	1.5J	150	110	<0.3	261.5
GW-9008	Oct-03	5.3	146	97	<0.1	248.3
GW-9008	Apr-04	1.3J	160.6J	97	<0.3	258.9
GW-9008	Oct-04	1.9J	149.2	75	<0.3	226.1
GW-9008	Apr-05	1.1J	170.5J	130	<0.3	301.6
GW-9008	Oct-05	16	121.0	73	<0.06	210.0
GW-9008	Apr-06	31L	99L	46L	<1.0UL	176.0L
GW-9008	Oct-06	9.6	121.1	84	<1.0	214.7
GW-9008	Apr-07	12	170.0	100	<1.0	282.0
GW-9008	Oct-07	21	161.1	85	<1.0	267.6
GW-9008	Apr-08	25 (26)	120 (150)	73 (74)	<1.0 (<1.0)	218 (250)
GW-9008	Oct-08	25	84	67	<1.0	176.0
GW-9008	Apr-09	17 J	171.2	100	< 1.0	288.2
GW-9008	Oct-09	23	141.2	71	<1.0	235.2
GW-9008	Apr-10	13	171.1	93	<1.0	277.1
GW-9008	Oct-10	20	151.3	61	<0.5	232.3
GW-9008	Apr-11	5.5	181.2	92	<0.5	278.7
GW-9008	Oct-11	13	221.5	59	<0.5	293.5
GW-9008	Apr-12	62	150.0	16	<1.0	228.0
GW-9008	Oct-12	54	69	7	<1.0	130.0
GW-9008	Apr-13	31	151	24	<0.5	206.0
GW-9008	Oct-13	24	191.3	33	<0.5	248.3
GW-9008	Apr-14	45	130	16	<0.5	192.1
GW-9008	Oct-14	180	245	<1.0	<1.0	425.0
GW-9008	Apr-15	18.4	182	54.4	<1.0	254.8
GW-9008	Oct-15	24.1	216 / <1.0	34.8	<1.0	274.9
GW-9008	Apr-16	2.2	70.6 / <1.0	13.8	<1.0	86.6
GW-9008	Oct-16	52.1	29.4 / <1.0	<1.0	<1.0	81.5
GW-9008	Apr-17	32.9	212 / 1.0	28.2	<1.0	274.1
GW-9008	Oct-17	73.1	123 / 1.6	3	<1.0	200.7
GW-9008	Apr-18	32.2	184 / 1.9	15.8	<1.0	233.9
GW-9008	Oct-18	17.7	222 / 1.3	25.3	<1.0	266.3
GW-9008	May-19	0.96J	199 / 0.68J	238	10.9	449.5
GW-9008	Oct-19	97.1	115/ 1.1	<1.0	<1.0	213.3
GW-9008	Apr-20	22.1	217 / 1.3	23.4	<1.0	263.8
GW-9008	Nov-20	19.9	234 / 1.1	20.2	<1.0	275.5
GW-9008	Apr-21	20.8	202 / 2.2	22.8	<1.0	247.8
GW-9008	Oct-21	16.4	226 / 1.2	27.9	<1.0	271.5
GW-9020	Oct-18	19.9	182 / 1.5	157	<1.0	360.4
GW-9020	May-19	4.4	180 / 1.0	239	< 1.0	424.4
GW-9020	Oct-19	1.6	115/ 0.98 J	149	<1.1	267.6
GW-9020	Apr-20	2.8	86.6 / 0.79J	119	<1.0	209.2
GW-9020	Nov-20	0.6 J	87.7 / 0.86 J	114	<1.0	203.2
GW-9020	Apr-21	<1.0	42.0 / <1.0	62.7	<1.0	104.7
GW-9020	Oct-21	29.4	215 / 11.3	60.1	<1.0	315.8
5	Oct 98	2300	9700	680	<200	12680
5	Apr 99	2300	15000	750	<200	18050
5	Oct 99	3200	14000	940	<200	18140
5	Jan-00	2000	24000	3000	<500	29000
5	Apr-00	120	2200	1500	<20	3820
5	Jul-00	79	500	180	<10	759
5	Oct-00	180	940	270	<20	1390
5	Apr-01	120	2800	1400	<50	4320
5	Oct-01	170	700	41	<10	911
5	Apr-02	200	6200	1900	<6	8300
5	Oct-02	470	2600	590	<3	3660
5	Apr-03	420	7500	1900	<12	9820
5	Oct-03	840	8000	1100	<12	9940
5	Apr-04	960	11000	1600	<12	13560
5	Oct-04	1700	10000	450	<12	12150
5	Apr-05	970 (1100)	14018 (15000)	650 (700)	0.09J (<12)	15638.9 (16800)
5	Oct-05	1300	11000	550J	<60	12850
5	Apr-06	950L	11000L	<200UL	<200UL	11950L

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Location	**Sample Date**	**Vinyl Chloride**	**1,2-dichloroethene (c/t)**	**trichloroethene**	**tetrachloroethene**	**TVOCs***
5	Oct-06	1500	14000	<500	<500	15500
5	Apr-07	1900	24000	150	<25	26050
5	Oct-07	2200	10000	540	<200	12840
5	Apr-08	1800	15020	190	<1.0	17010
5	Oct-08	920	4100	370	<200	5390
5	Apr-09	1700 J	11000	120	<100	12820
5	Oct-09	1100	7400	95	<50	8595
5	Apr-10	370	6600	<100	<100	6970
5	Oct-10	1200	11110	210	<25	12520
5	Apr-11	1000 (900)	7030 (7360)	110 (98)	<25 (<25)	8140 (8358)
5	Oct-11	1200	6100	32	<25	7332
5	Apr-12	290	5900	<25	<25	6190
5	Oct-12	2400	8700	34	<25	11134
5	Apr-13	1300	6500	27	<25	7827
5	Oct-13	990 (1200)	4200 (4300)	57 (65)	<25 (<25)	5247 (5565)
5	Apr-14	1200	5500	84	<0.5	6792
5	Oct-14	2850 (2550)	7790 (6490)	8.0 (8.2)	<1.0 (<1.0)	10750 (9143.2)
5	Apr-15	875	4670 / 91.2	12.3	<1.0	5648.5
5	Oct-15	2720	3470 / 38.9	6.2	<1.0	6235.1
5	Apr-16	3300	12600 / 152	125	<1.0	16177
5	Oct-16	723	909 / 2.2	1.7	<1.0	1635.9
5	Apr-17	706	1420 / 3.6	13.7	<1.0	2143.3
5	Oct-17	1820	2570 /43.2	0.62J	<1.0	4433.8
5	Apr-18	1860	6120 / 40.4	53.2	<1.0	8073.6
5	Oct-18	1900	5430 / 54.0	12.3	<1.0	7396.3
5	May-19	1020	4910 / 40.8	36.3	<1.0	6007.1
5	Oct-19	460	468 / 1.0J	0.60 J	<1.1	930.6
5	Apr-20	1800	3350 / 12.9	40.8	<1.0	5203.7
5	Nov-20	543	927 / 1.7	1.4	<1.0	1473.1
5	Apr-21	838	3060 / 20.7	11.3	<1.0	3930.0
5	Oct-21	2080	5720 / 19.7	34.2	<1.0	7853.9
6	Oct-01	<1.0	<1.0	<1.0	<1.0	ND
6	Apr-02	<0.2	1.0J	0.92J	<0.06	1.9
6	Oct-02	<0.2	1.1	0.92J	<0.06	2.0
6	Apr-03	<0.2	0.4J	1.0J	<0.06	1.4
6	Oct-03	<0.2	1.0J	0.8J	<0.06	1.8
6	Apr-04	<0.2	0.1J	0.4J	<0.06	0.5
6	Oct-04	<0.2	1.2	0.6J	<0.06	1.8
6	Apr-05	<0.2	<0.2	0.3J	<0.06	0.3
6	Oct-05	<0.2	2.3	0.9J	<0.06	3.2
6	Apr-06	<1.0	3.8	<1.0	<1.0	3.8
6	Oct-06	<1.0	1.2	<1.0	<1.0	1.2
6	Apr-07	<1.0	<1.0	<1.0	<1.0	ND
6	Oct-07	<1.0	1.1	<1.0	<1.0	1.1
6	Apr-08	<1.0	<1.0	<1.0	<1.0	ND
6	Oct-08	<1.0	1.2	<1.0	<1.0	1.2
6	Apr-09	<1.0	<1.0	1.2	<1.0	1.2
6	Oct-09	<1.0	<1.0	<1.0	<1.0	ND
6	Apr-10	<1.0	<1.0	<1.0	<1.0	ND
6	Oct-10	<0.5	0.8	0.7	<0.5	1.5
6	Oct-11	7.1	39	0.7	<0.5	46.8
6	Oct-12	<0.5	<0.5	<0.5	<0.5	ND
6	Oct-13	<0.5	<0.5	<0.5	<0.5	ND
6	Oct-14	<1.0	<1.0	<1.0	<1.0	ND
6	Oct-15	<1.0	1.2 / <1.0	<1.0	<1.0	1.2
6	Oct-16	<1.0	<1.0 / <1.0	<1.0	<1.0	ND
6	Oct-17	<1.0	<1.0 / <1.0	<1.0	<1.0	ND
6	Nov-18	<1.0	0.47J / <1.0	0.81J	<1.0	1.28
6	Oct-19	<1.0	0.82 J/ <1.0	0.67 J	<1.0	1.49
6	Nov-20	<1.0	1 / <1.0	0.56 J	<1.0	1.56
6	Oct-21	<1.0	1.1 / <1.0	1.5 J+	<1.0	2.60
7D	Oct 98	1	6.6	<1.0	<1.0	7.6
7D	Apr 99	<1.0	<1.0	2.5	<1.0	2.5
7D	Oct 99	<1.0	<1.0	<1.0	<1.0	ND
7D	Jan-00	<1.0	<1.0	<1.0	<1.0	ND

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7D	Apr-00	<1.0	<1.0	<1.0	<1.0	ND
7D	Jul-00	<1.0	8.5	<1.0	<1.0	8.5
7D	Oct-00	<1.0	<1.0	<1.0	<1.0	ND
7D	Apr-01	<1.0	<1.0	<1.0	<1.0	ND
7D	Oct-01	<1.0	1.2	<1.0	<1.0	1.2
7D	Jan-02	<1.0	2.3	<1.0	<1.0	2.3
7D	Apr-02	0.2J	4.7	0.34J	<0.06	5.2
7D	Jul-02	<0.2	2.8	0.22J	<0.06	3.0
7D	Oct-02	<0.2	2.8	0.17J	<0.06	3.0
7D	Jan-03	<0.2	2.8	0.16J	0.86J	3.8
7D	Apr-03	<0.2	2.0	0.1J	0.2J	2.3
7D	Jul-03	<0.2	1.6	0.09J	0.2J	1.9
7D	Oct-03	<0.2	1.3	0.09J	0.1J	1.5
7D	Jan-04	2.2 (2.1)	9.5 (9.3)	0.2J (0.2J)	<0.06 (<0.06)	11.9 (11.6)
7D	Apr-04	1.7	7.5	0.2J	<0.06	9.4
7D	Jul-04	1.2	6.3	<0.08	<0.06	7.5
7D	Oct-04	1.4	5.6	<0.08	<0.06	7.0
7D	Jan-05	<2.0 (<2.0)	5.6J (6.3J)	<100 (<100)	13 (13)	18.6 (19.3)
7D	Apr-05	<20	<20	24J	14J	38.0
7D	Jul-05	1.5J	2.4J	57	5.9	66.8
7D	Oct-05	<1.0	0.9J	<0.4	0.4J	1.3
7D	Jan-06	1.4	1.1	1.5	<1.0UL	4.0
7D	Apr-06	1.4L	<1.0	<1.0	<1.0	1.40L
7D	Jul-06	1.9	<1.0	<1.0	<1.0	1.9
7D	Oct-06	1.7	<1.0	<1.0	<1.0	1.7
7D	Jan-07	<1.0	<1.0	<1.0	<1.0	ND
7D	Apr-07	1.5	<1.0	<1.0	<1.0	1.5
7D	Jul-07	1.3	<1.0	<1.0	<1.0	1.3
7D	Oct-07	1.9	1.1	<1.0	<1.0	3.0
7D	Jan-08	<1.0	<1.0	<1.0	<1.0	ND
7D	Apr-08	<1.0	<1.0	<1.0	<1.0	ND
7D	Jul-08	<1.0 (<1.0)	<1.0 (<1.0)	<1.0 (<1.0)	<1.0 (<1.0)	ND
7D	Oct-08	<1.0	<1.0	<1.0	<1.0	ND
7D	Jan-09	<1.0	<1.0	<1.0	<1.0	ND
7D	Apr-09	1.4 J	<1.0	<1.0	<1.0	1.4
7D	Jul-09	<1.0	<1.0	<1.0	<1.0	ND
7D	Oct-09	<1.0	<1.0	<1.0	<1.0	ND
7D	Jan-10	<1.0	<1.0	<1.0	<1.0	ND
7D	Apr-10	<1.0	<1.0	<1.0	<1.0	ND
7D	Jul-10	<0.5	<0.5	<0.5	<0.5	ND
7D	Oct-10	0.6	<0.5	<0.5	<0.5	0.6
7D	Oct-11	<0.5	<0.5	<0.5	<0.5	ND
7D	Oct-12	0.5	2.2	<0.5	<0.5	2.7
7D	Oct-13	1.9	1.9	<0.5	<0.5	3.8
7D	Oct-14	<1.0	<1.0	<1.0	<1.0	ND
7D	Oct-15	<1.0	<1.0	<1.0	<1.0	ND
7D	Oct-16	1.6	2.1 / <1.0	<1.0	<1.0	3.7
7D	Oct-17	0.38J	0.28J / <1.0	<1.0	<1.0	0.66
7D	Nov-18	<1.0	<1.0	<1.0	<1.0	ND
7D	Oct-19	<1.0	<1.0 / <1.0	<1.0	<1.0	ND
7D	Nov-20	2	2.1 / <1.0	<1.0	1.5	5.60
7D	Oct-21	1.9	1.0 / <1.0	<1.0	<1.0	2.90
10D	Oct-01	<1.0	<1.0	<1.0	<1.0	ND
10D	Jan-02	<1.0	<1.0	<1.0	<1.0	ND
10D	Apr-02	<0.2	<0.2	0.17J	<0.06	0.2
10D	Jul-02	<0.2	0.1J	0.14J	<0.06	0.2
10D	Oct-02	<0.2	<0.2	<0.08	<0.06	ND
10D	Jan-03	<0.2	0.1J	0.13J	<0.06	0.2
10D	Apr-03	<1.0	97	22	<0.3	119.0
10D	May-03	<0.2	86	19	<0.06	105.0
10D	Jul-03	<0.2	77.1J	14	<0.06	91.1
10D	Oct-03	<0.2	39.1J	4.4	<0.06	43.5
10D	Jan-04	1.7	50.1J	4.7	<0.06	56.5
10D	Apr-04	2.4	53.1J	4.7	<0.06	60.2
10D	Jul-04	2.9 (2.9)	24 (26)	1.1 (1.3)	<0.06 (<0.06)	28 (30.2)

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Summary of Analytical Results for Selected VOCs and TVOCs in Water Samples –
October 1998 – October 2021
GE Lancaster Annual Report
Lancaster, PA

MCL (µg/L):		2	70 cis, 100 trans	5	5	
Location	**Sample Date**	**Vinyl Chloride**	**1,2-dichloroethene (c/t)**	**trichloroethene**	**tetrachloroethene**	**TVOCs***
10D	Oct-04	1.6 (1.7)	16 (16)	0.3J (0.3J)	<0.06 (<0.06)	17.9 (18)
10D	Jan-05	<2.0	7.2J	<50	26	33.2
10D	Apr-05	2.3J	4.1J	28	4.9J	39.3
10D	Jul-05	1.7	3.9J	7.3	1.1	14.0
10D	Oct-05	0.9J	0.9J	1.4	0.5J	3.7
10D	Jan-06	5.7	22	<1.0	<1.0	27.7
10D	Apr-06	9.5	24	<1.0	<1.0	33.5
10D	Jul-06	5.4	32	<1.0	<1.0	37.4
10D	Oct-06	2.1	5.6	<1.0	<1.0	7.7
10D	Jan-07	3.1	61	<1.0	<1.0	64.1
10D	Apr-07	5.8	43	<1.0	<1.0	48.8
10D	Jul-07	4.5 (4.2)	18 (18)	<1.0	<1.0	22.5 (22.2)
10D	Oct-07	3.3	6.5	<1.0	<1.0	9.8
10D	Jan-08	1.1	7.3	<1.0	<1.0	8.4
10D	Apr-08	1.9	25	<1.0	<1.0	26.9
10D	Jul-08	6.5	24	<1.0	<1.0	30.5
10D	Oct-08	<1.0	2.2	<1.0	<1.0	2.2
10D	Jan-09	1.7 (1.7)	24 (24)	< 1.0 (<1.0)	< 1.0 (< 1.0)	25.7 (25.7)
10D	Apr-09	3.3 J	18	<1.0	<1.0	21.3
10D	Jul-09	3.7 (3.4)	59 (57)	<1.0 (<1.0)	< 1.0 (< 1.0)	62.7 (60.4)
10D	Oct-09	4.0	11	<1.0	<1.0	15.0
10D	Jan-10	2.0	33	1.8	<1.0	36.8
10D	Apr-10	2.7	58	1.8	<1.0	62.5
10D	Jul-10	2.1	9.0	0	0	11.1
10D	Oct-10	<0.5	1.7	<0.5	<0.5	1.7
10D	Apr-11	1.9	35	2.3	<0.5	39.2
10D	Oct-11	2.4	23	2.1	<0.5	27.5
10D	Apr-12	3.9	72	0.6	<0.5	76.5
10D	Oct-12	1.7	8.6	<0.5	<0.5	10.3
10D	Apr-13	0.7	7.5	<0.5	<0.5	8.2
10D	Oct-13	1.4	6.1	<0.5	<0.5	7.5
10D	Apr-14	1.1	29	1.7	<0.5	31.8
10D	Oct-14	241	357	1.8	<1.0	599.8
10D	Feb-15	1.4	33	1.0	<1.0	35.4
10D	Apr-15	2.0 (2.3)	15.6 (17.1)	1.1 (1.1)	<1.0 (<1.0)	18.7 (20.5)
10D	Oct-15	<1.0	5.5 / <1.0	<1.0	<1.0	5.5
10D	Apr-16	1.1	37.4 / <1.0	1.6	<1.0	40.1
10D	Oct-16	<1.0	3.2 / <1.0	<1.0	<1.0	3.2
10D	Apr-17	1.3	2.1 / <1.0	<1.0	<1.0	3.4
10D	Oct-17	0.48J	2.7 / <1.0	<1.0	<1.0	3.2
10D	Apr-18	0.44J	4.5 / <1.0	0.86J	<1.0	5.8
10D	Oct-18	1.2	10.5 / <1.0	<1.0	<1.0	11.7
10D	May-19	3.0	46.0 / 0.39	2.1	<1.0	51.5
10D	Oct-19	2.1	6.0/ <1.1	0.39 J	<1.1	8.5
10D	Apr-20	0.60 J	5.8 / <1.0	0.51 J	<1.0	6.9
10D	Nov-20	<1.0	1.3 / <1.0	<1.0	<1.0	1.3
10D	Apr-21	<1.0	2.8 / <1.0	2.2	<1.0	5.0
10D	Oct-21	0.31 J	2.9 / <1.0	1.1 J+	<1.0	4.3
11S	Oct-98	8.6	85	<1.0	<1.0	93.6
11S	Apr 99	1.7	10	1	<1.0	12.7
11S	Oct 99	5.3	32	<1.0	<1.0	37.3
11S	Jan-00	14	200	<1.0	<1.0	214.0
11S	Apr-00	10	200	17	<1.0	227.0
11S	Jul-00	26	300	21	<5.0	347.0
11S	Oct-00	21	67	1	<1.0	89.0
11S	Apr-01	5.3	14	<1.0	<1.0	19.3
11S	Oct-01	28	110	5.7	<1.0	143.7
11S	Apr-02	74	401.5	90	<0.06	565.5
11S	Oct-02	63	290.7J	84	<0.3	437.7
11S	Apr-03	77	1500	110	<3.0	1687.0
11S	Oct-03	60	703.4J	64	<1.2	827.4
11S	Apr-04	130	341.1J	<0.4	<0.3	471.1
11S	Oct-04	71	310.6J	<0.4	<0.3	381.6
11S	Apr-05	6.5	8.3	<0.08	<0.06	14.8
11S	Oct-05	2.2	3.1	0.09J	<0.06	5.4

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Location	**Sample Date**	**Vinyl Chloride**	**1,2-dichloroethene (c/t)**	**trichloroethene**	**tetrachloroethene**	**TVOCs***
11S	Apr-06	2.8	4.4	<1.0	<1.0	7.2
11S	Oct-06	1.2	1.9	<1.0	<1.0	3.1
11S	Apr-07	1.6	2.9	<1.0	<1.0	4.5
11S	Oct-07	1.7	2.8	<1.0	<1.0	4.5
11S	Apr-08	1.3	5.2	<1.0	<1.0	6.5
11S	Oct-08	1.2	2.2	<1.0	<1.0	3.4
11S	Apr-09	1.1 J	2.4	<1.0	<1.0	3.5
11S	Oct-09	1.6	3.3	<1.0	<1.0	4.9
11S	Apr-10	1.7	4.8	<1.0	<1.0	6.5
11S	Oct-10	1	2.3	<0.5	<0.5	3.3
11S	Oct-11	1.5	2.5	<0.5	<0.5	4.0
11S	Oct-12	1.5	3.7	<0.5	<0.5	5.2
11S	Oct-13	0.7	2.2	<0.5	<0.5	2.9
11S	Oct-14	1.3	3.8	<1.0	<1.0	5.1
11S	Oct-15	<1.0	2.4 / <1.0	<1.0	<1.0	2.4
11S	Oct-16	<1.0	3.1 / <1.0	<1.0	<1.0	3.1
11S	Oct-17	0.49J	2.8 / <1.0	<1.0	<1.0	3.3
11S	Oct-18	32.0	98.5 / 0.37J	<1.0	<1.0	130.87
11S	Oct-19	0.95 J	6.1/ <1.0	0.32 J	<1.0	7.37
11S	Nov-20	0.48 J	1.5/ <1.0	<1.0	<1.0	1.98
12D	Oct 98	<1.0	<1.0	<1.0	<1.0	ND
12D	Apr 99	<1.0	<1.0	<1.0	<1.0	ND
12D	Oct 99	<1.0	<1.0	<1.0	<1.0	ND
12D	Jan-00	<1.0	<1.0	<1.0	<1.0	ND
12D	Apr-00	<1.0 (<1.0)	<1.0 (<1.0)	<1.0 (<1.0)	<1.0 (<1.0)	ND
12D	Jul-00	<1.0	<1.0	<1.0	<1.0	ND
12D	Oct-00	<1.0	<1.0	<1.0	<1.0	ND
12D	Apr-01	<1.0	<1.0	<1.0	<1.0	ND
12D	Oct-01	<1.0	<1.0	<1.0	<1.0	ND
12D	Jan-02	<1.0	<1.0	<1.0	<1.0	ND
12D	Apr-02	<0.2	<0.2	<0.08	<0.06	ND
12D	Jul-02	<0.2	<0.2	<0.08	<0.06	ND
12D	Oct-02	<0.2	<0.2	<0.08	<0.06	ND
12D	Jan-03	<0.2 (<0.2)	<0.2 (<0.2)	<0.08 (<0.08)	<0.06 (<0.06)	ND
12D	Apr-03	<0.2	<0.2	<0.08	<0.06	ND
12D	Jul-03	<0.2 (<0.2)	<0.2 (<0.2)	<0.08 (<0.08)	<0.06 (<0.06)	ND
12D	Oct-03	<0.2	<0.2	<0.08	<0.06	ND
12D	Jan-04	<0.2	<0.2	<0.08	<0.06	ND
12D	Apr-04	<0.2	<0.2	<0.08	<0.06	ND
12D	Jul-04	<0.2	<0.2	<0.08	<0.06	ND
12D	Oct-04	<0.2	<0.2	<0.08	<0.06	ND
12D	Jan-05	<0.2	<0.2	<0.08	<0.06	ND
12D	Apr-05	<0.2	<0.2	<0.08	<0.06	ND
12D	Jul-05	<0.2 (<0.2)	<0.2 (<0.2)	<0.08 (0.09J)	<0.06 (<0.06)	ND (0.09)
12D	Oct-05	<0.2	<0.2	<0.08	<0.06	ND
12D	Jan-06	<1.0	<1.0	<1.0	<1.0	ND
12D	Apr-06	<1.0	<1.0	<1.0	<1.0	ND
12D	Jul-06	<1.0	<1.0	<1.0	<1.0	ND
12D	Oct-06	<1.0	<1.0	<1.0	<1.0	ND
12D	Jan-07	<1.0	<1.0	<1.0	<1.0	ND
12D	Apr-07	<1.0	<1.0	<1.0	<1.0	ND
12D	Jul-07	<1.0	<1.0	<1.0	<1.0	ND
12D	Oct-07	<1.0	<1.0	<1.0	<1.0	ND
12D	Jan-08	<1.0	<1.0	<1.0	<1.0	ND
12D	Apr-08	<1.0	<1.0	<1.0	<1.0	ND
12D	Jul-08	<1.0	<1.0	<1.0	<1.0	ND
12D	Oct-08	<1.0	<1.0	<1.0	<1.0	ND
12D	Jan-09	<1.0	<1.0	<1.0	<1.0	ND
12D	Apr-09	<1.0	<1.0	<1.0	<1.0	ND
12D	Jul-09	<1.0	<1.0	<1.0	<1.0	ND
12D	Oct-09	<1.0	<1.0	<1.0	<1.0	ND
12D	Jan-10	<1.0	<1.0	<1.0	<1.0	ND
12D	Apr-10	<1.0	<1.0	<1.0	<1.0	ND
12D	Jul-10	<1.0	<1.0	<1.0	<1.0	ND
12D	Oct-10	<0.5	<0.5	<0.5	<0.5	ND

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Location	**Sample Date**	**Vinyl Chloride**	**1,2-dichloroethene (c/t)**	**trichloroethene**	**tetrachloroethene**	**TVOCs***
12D	Oct-11	<0.5	<0.5	<0.5	<0.5	ND
12D	Oct-12	<0.5	<0.5	<0.5	<0.5	ND
12D	Oct-13	<0.5	<0.5	<0.5	<0.5	ND
12D	Oct-14	<1.0	<1.0	<1.0	<1.0	ND
12D	Oct-15	<1.0	<1.0 / <1.0	<1.0	<1.0	ND
12D	Oct-16	<1.0	<1.0 / <1.0	<1.0	<1.0	ND
12D	Oct-17	<1.0	<1.0 / <1.0	<1.0	<1.0	ND
12D	Oct-18	<1.0	<1.0 / <1.0	<1.0	<1.0	ND
12D	Oct-19	<1.0	<1.0 / <1.0	<1.0	<1.0	ND
12D	Nov-20	<1.0	<1.0 / <1.0	<1.0	<1.0	ND
12D	Oct-21	<1.0	<1.0 / <1.0	<1.0	<1.0	ND
14	Oct 98	2.7	71	27	<1.0	100.7
14	Apr 99	18	336.3	81	<5.0	435.3
14	Oct 99	28	310	110	<2.0	448.0
14	Jan-00	14	240	44	<1.0	298.0
14	Apr-00	18	190	100	<1.0	308.0
14	Jul-00	17 (21)	160 (171.2)	50 (68)	<0.3 (<0.06)	227 (260.2)
14	Oct-00	20 (18)	110 (89)	57 (46)	<1.0 (<1.0)	187 (153)
14	Apr-01	22	110	52	<1.0	184.0
14	Oct-01	32	110	28	<1.0	170.0
14	Apr-02	87	421J	110	<0.6	618.0
14	Oct-02	66	340.8J	110	<0.3	516.8
14	Apr-03	49	690	250	<1.2	989.0
14	Oct-03	440J	27750L	950	<30	29140.0
14	Apr-04	42	250	23	<0.3	315.0
14	Oct-04	47	372.5J	9.7J	<0.6	429.2
14	Apr-05	6.7	180	12	<0.3	198.7
14	Oct-05	4.4	64.1J	7.0	<0.06	75.5
14	Apr-06	14	240	30.0	<1.0	284.0
14	Oct-06	8	150	40.0	<1.0	198.0
14	Apr-07	6.8	190	31.0	<1.0	227.8
14	Oct-07	3.8	120	21.0	<1.0	144.8
14	Apr-08	4.5	190	25.0	<1.0	219.5
14	Oct-08	3.1	100	23.0	<1.0	126.1
14	Apr-09	< 1.0	12	1.9	<1.0	13.9
14	Oct-09	3.2	140	29.0	<1.0	172.2
14	Apr-10	<5.0	220	20.0	<5.0	240.0
14	Oct-10	2.2	78	11.0	<0.5	91.0
14	Apr-11	5.0	110.6	13.0	<0.5	128.6
14	Oct-11	3.7 (4.9)	92 (95)	5.8 (8.2)	<0.5	102 (108.1)
14	Apr-12	3.9	97	3.7	<0.5	104.6
14	Oct-12	3.1	62	2.7	<0.5	67.8
14	Apr-13	1.5 (1.5)	54 (64)	2.3 (2.4)	<0.5 (<0.5)	57.8 (67.9)
14	Oct-13	3.8	110	4.6	<0.5	118.4
14	Apr-14	1.0	38	1.6	<0.5	40.6
14	Oct-14	<1.0	60.9	170	14.6	245.5
14	Feb-15	9.4	217	5.9	<1.0	232.3
14	Apr-15	4.2	205	6.9	<1.0	216.1
14	Oct-15	2.2	85.6 / <1.0	2.0	<1.0	89.8
14	Apr-16	25	125 / <1.0	<1.0	<1.0	150.0
14	Oct-16	<1.0	40.6 (39.4) / <1.0	1.8 (1.6)	<1.0	42.4 (41.0)
14	Apr-17	16.4	230 / 2.4	6.4	<1.0	255.2
14	Oct-17	15.6	219 / 4.9	3.7	<1.0	243.2
14	Apr-18	3.9	134 / 5.9	4.7	<1.0	148.5
14	Oct-18	31.8	257 / 1.9	5.2	<1.0	295.9
14	May-19	53	340 /1.3	3.6	<1.0	397.3
14	Oct-19	1.7	45.4 / <1.0	1.4	<1.0	48.5
14	Apr-20	1.1	63.3/ 0.66J	2.4	<1.0	67.5
14	Nov-20	1.1	74.9/ <1.0	2.7	<1.0	78.7
14	Apr-21	10.6	195 / 1.6	4.5	<1.0	211.7
14	Oct-21	0.61 J	61.2 / <1.0	3.5	<1.0	65.3
15	Oct 98	14	35	1.8	<1.0	50.8
15	Apr 99	3.8	8.8	<1.0	<1.0	12.6
15	Oct 99	3.9	5.7	<1.0	<1.0	9.6
15	Jan-00	2.8	2.9	<1.0	<1.0	5.7

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15	Apr-00	3	3.8	<1.0	<1.0	6.8
15	Jul-00	2.3	2.1	<1.0	<1.0	4.4
15	Oct-00	1.9	10	3.4	<1.0	15.3
15	Apr-01	12 (11)	29 (29)	<1.0 (<1.0)	<1.0 (<1.0)	41 (40)
15	Oct-01	17	36	<1.0	<1.0	53.0
15	Apr-02	14	36.5J	0.54J	<0.06	51.0
15	Oct-02	4.2 (4.8)	12.1J (13.1J)	0.82J (0.79J)	<0.06 (<0.06)	17.12 (18.69)
15	Apr-03	14	14.1J	0.3J	<0.06	28.4
15	Oct-03	1.6	7.9J	1.9	<0.06	11.4
15	Apr-04	1.5	7.3J	0.6J	<0.06	9.4
15	Oct-04	2.2	6.1	0.4J	<0.06	8.7
15	Apr-05	1.1	8.4	0.5J	<0.06	10.0
15	Oct-05	2.5 (2.5)	10.1J (9.9J)	0.3J (0.4J)	<0.06 (<0.06)	12.9 (12.8)
15	Apr-06	2.2L	6.9L	<1.0UL	<1.0UL	9.1
15	Oct-06	1.5	5.7	<1.0	<1.0	7.2
15	Apr-07	1.7	7.8	<1.0	<1.0	9.5
15	Oct-07	3.1	12	<1.0	<1.0	15.1
15	Apr-08	1.4	2.5	<1.0	<1.0	3.9
15	Oct-08	1.4	2.0	<1.0	<1.0	3.4
15	Apr-09	1.3 J	1.7	< 1.0	<1.0	3.0
15	Oct-09	<1.0	1.1	<1.0	<1.0	1.1
15	Apr-10	<1.0	<1.0	<1.0	<1.0	ND
15	Oct-10	0.5	0.7	<0.5	<0.5	1.2
15	Oct-11	0.6	0.5	<0.5	<0.5	1.1
15	Oct-12	<0.5	<0.5	<0.5	<0.5	ND
15	Oct-13	<0.5	<0.5	<0.5	<0.5	ND
15	Oct-14	<1.0	<1.0	<1.0	<1.0	ND
15	Oct-15	<1.0	<1.0 / <1.0	<1.0	<1.0	ND
15	Oct-16	<1.0	<1.0 / <1.0	<1.0	<1.0	ND
15	Oct-17	<1.0	<1.0 / <1.0	<1.0	<1.0	ND
15	Oct-18	<1.0	<1.0	<1.0	<1.0	ND
15	Oct-19	<1.0	<1.0 / <1.0	<1.0	<1.0	ND
15	Nov-20	<1.0	<1.0 / <1.0	<1.0	<1.0	ND
15	Oct-21	<1.0	<1.0 / <1.0	<1.0	<1.0	ND
18	Oct 98	<5.0	160	140	36	336.0
18	Apr 99	<5.0	160	200	24	384.0
18	Oct 99	<2.0	84	200	25	309.0
18	Jan-00	<5.0	70	300	31	401.0
18	Apr-00	<2.0	100	130	26	256.0
18	Jul-00	<2.0	73	110	28	211.0
18	Oct-00	3.7	110	130	20	263.7
18	Apr-01	2.9	92	130	21	245.9
18	Oct-01	<1.0	79	120	31	230.0
18	Apr-02	NS	NS	NS	NS	NS
18	Jul-02	46	151.6	130	22	349.6
18	Oct-02	3.5	100.9J	140	23	267.4
18	Apr-03	<1.0	54	140	22	216.0
18	Oct-03	0.7J	87.9J	180	18	286.6
18	Apr-04	<2.0	173.6J	240	16	429.6
18	Oct-04	<2.0	180	280	16	476.0
18	Apr-05	<1.0	93	280	18	391.0
18	Oct-05	1.4J	181.4J	350	18	550.8
18	Apr-06	<5.0UL	250	340	19	609.0
18	Oct-06	<1.0	53	200	15	269.9
18	Apr-07	<1.0	49	170	18	237.0
18	Oct-07	<1.0	34	130	22	186.0
18	Apr-08	<1.0	23	96	19	138.0
18	Oct-08	<1.0	29	97	17	143.0
18	Apr-09	< 1.0	20	120	24	164.0
18	Oct-09	<1.0	110	140	17	267.0
18	Apr-10	<1.0	120	150	18	288.0
18	Oct-10	<1.0	100	220	15	335.0
18	Apr-11	1.4	91	160	15	267.4
18	Oct-11	<1.1	11	78	11	100.0
18	Apr-12	0.6	93	180	18	291.6

Table 7
Summary of Analytical Results for Selected VOCs and TVOCs in Water Samples –
October 1998 – October 2021
GE Lancaster Annual Report
Lancaster, PA

MCL (µg/L):		2	70 cis, 100 trans	5	5	
Location	**Sample Date**	**Vinyl Chloride**	**1,2-dichloroethene (c/t)**	**trichloroethene**	**tetrachloroethene**	**TVOCs***
18	Oct-12	3.5	57	190	14	264.5
18	Apr-13	<1.0	68	120	11	199.0
18	Oct-13	< 0.5	35	120	16	171.0
18	Apr-14	<0.5	24	110	13	147.0
18	Oct-14	1.5	60.1	2	<1.0	63.6
18	Apr-15	<1.0	54.9	203	18.9	276.8
18	Oct-15	<1.0	72.6 / <1.0	140	12.3	224.9
18	Apr-16	1.6	187 / 1.6	666	35.4	891.6
18	Oct-16	<1.0	107 / <1.0	180	10.5	297.5
18	Apr-17	<1.0	149 / 1.3	307	25.1	482.4
18	Oct-17	0.57J	155 / 7.4	226	12.6	401.6
18	Apr-18	0.94J	170 / 3.5	213	12.2	399.6
18	Oct-18	4.2	126 / 2.6	209	9.4	351.2
18	May-19	5.9	147 / 0.73	103	5.6	262.2
18	Oct-19	0.96 J	192/ 0.77J	164	7	364.7
18	Apr-20	0.77 J	193 / 0.53 J	174	9.4	377.7
18	Nov-20	0.8 J	208/ 0.63 J	161	9	379.4
18	Apr-21	1.2	218 / 1.7	174	8.1	403.0
18	Oct-21	0.92 J	201 / 0.79 J	157	7.9	367.6
SPRING-1	Oct 98	<1.0	6.6	86	2	94.6
SPRING-1	Apr 99	<1.0	9.5	85	2	96.5
SPRING-1	Oct 99	<1.0	10	77	1.8	88.8
SPRING-1	Jan-00	<1.0	9.8	83	1.6	94.4
SPRING-1	Apr-00	<1.0	11	73	1.4	85.4
SPRING-1	Jul-00	<1.0	6.4	74	1.5	81.9
SPRING-1	Oct-00	<1.0	6.9	74	1.1	82.0
SPRING-1	Apr-01	<1.0	11	83	1.5	95.5
SPRING-1	Oct-01	<1.0	8.4	110	1.7	120.1
SPRING-1	Apr-02	<0.4	8.7	110	1.8J	120.5
SPRING-1	Oct-02	<0.4	9.4	100	1.8J	111.2
SPRING-1	Apr-03	<0.2 (<0.2)	11.2J (12.2J)	95 (95)	2.5 (2.6)	108.7 (109.8)
SPRING-1	Oct-03	<0.2	11.2J	92	2.8	106.0
SPRING-1	Apr-04	<0.4 (<0.4)	9.5 (9.5)	63 (62)	1.9J (1.8J)	74.4 (73.3)
SPRING-1	Oct-04	<1.0	18	110	2.2J	130.2
SPRING-1	Apr-05	<0.2	20.2J	110	1.8	132.0
SPRING-1	Oct-05	0.3J	21.4J	140	2.4	164.1
SPRING-1	Apr-06	<1.0	13	110	3.2	126.2
SPRING-1	Oct-06	<1.0	14	140	2.8	158.2
SPRING-1	Apr-07	<1.0	12	99	2.1	113.1
SPRING-1	Oct-07	<1.0	10	130	2.3	142.3
SPRING-1	Apr-08	<1.0	27	140J	2	169.0
SPRING-1	Oct-08	<1.0 (<1.0)	8.4 (9.4)	130 (120)	1.5 (1.5)	139.9 (130.9)
SPRING-1	Apr-09	< 1.0 (< 1.0)	12 (12)	140 (140)	1.7 (1.5)	163.7 (153.5)
SPRING-1	Oct-09	<1.0	24	140	1.4	165.4
SPRING-1	Apr-10	<1.0 (<1.0)	9.5 (10)	110 (110)	1.3 (1.4)	120.8 (121.4)
SPRING-1	Oct-10	<0.5	16	100	1.3	117.3
SPRING-1	Apr-11	<0.5	17	98	1.1	116.1
SPRING-1	Oct-11	<0.5	14	100	1.1	115.1
SPRING-1	Apr-12	<0.5 (<0.5)	14 (14)	140 (140)	1.3 (1.3)	155.3 (155.3)
SPRING-1	Oct-12	<0.5	15	120	1.1	136.1
SPRING-1	Apr-13	<0.5	11	97	1	109.0
SPRING-1	Oct-13	<0.5	20	110	1.2	131.2
SPRING-1	Apr-14	<0.5	15J	91J	1.1J	107.1
SPRING-1	Oct-14	<1.0	16.4	122	1.3	139.7
SPRING-1	Apr-15	<1.0	12.8	138	<1.0	150.8
SPRING-1	Oct-15	<1.0	17.2 / <1.0	107	<1.0	124.2
SPRING-1	Apr-16	<1.0	18.1 / <1.0	139	1.3	158.4
SPRING-1	Oct-16	<1.0	14.6 / <1.0	111	<1.0	125.6
SPRING-1	Apr-17	<1.0	18 / <1.0	132	<1.0	150.0
SPRING-1	Oct-17	<1.0	16.4 / 0.75J	112	0.97J	130.1
SPRING-1	Apr-18	<1.0	16.7 / 0.67J	118	1	136.4
SPRING-1	Oct-18	<1.0	32.4 / <1.0	175	1.5	208.9
SPRING-1	May-19	<1.0	16.1 / 0.32J	98.3	0.81J	115.5
SPRING-1	Oct-19	<1.1	18.5/ <1.1	132	1.1	151.6
SPRING-1	Apr-20	<1.0	18.9/ 0.35 J	121	0.92 J	141.2

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October 1998 – October 2021
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Lancaster, PA

MCL (µg/L):		2	70 cis, 100 trans	5	5	
Location	**Sample Date**	**Vinyl Chloride**	**1,2-dichloroethene (c/t)**	**trichloroethene**	**tetrachloroethene**	**TVOCs***
SPRING-1	Nov-20	<1.0	25.4/ <1.0	125	1.2	151.6
SPRING-1	Apr-21	<1.0	14.7 / <1.0	34.1	1.2	50.0
SPRING-1	Oct-21	<1.0	14.9 / <1.0	32.0	1.0	47.9
SPRING-2	Oct 98	NS	NS	NS	NS	NS
SPRING-2	Apr 99	1	13	6.3	<1.0	20.3
SPRING-2	Oct 99	<1.0	8.2	7.6	<1.0	15.8
SPRING-2	Jan-00	NS	NS	NS	NS	NS
SPRING-2	Apr-00	NS	NS	NS	NS	NS
SPRING-2	Jul-00	NS	NS	NS	NS	NS
SPRING-2	Oct-00	NS	NS	NS	NS	NS
SPRING-2	Apr-01	NS	NS	NS	NS	NS
SPRING-2	Oct-01	NS	NS	NS	NS	NS
SPRING-2	Apr-06	NS	NS	NS	NS	NS
SPRING-2	Apr-07	NS	NS	NS	NS	NS
SPRING-2	Oct-08	NS	NS	NS	NS	NS
SPRING-2	Apr-09	NS	NS	NS	NS	NS
SPRING-2	Oct-09	NS	NS	NS	NS	NS
SPRING-2	Apr-10	NS	NS	NS	NS	NS
SPRING-2	Oct-10	NS	NS	NS	NS	NS
AW-3	Oct 98	<2.0	75	190	6.4	271.4
AW-3	Apr 99	<5.0	82	200	5.4	287.4
AW-3	Oct 99	<5.0	89	240	<5.0	329.0
AW-3	Jan-00	<2.0	65	220	6.5	291.5
AW-3	Apr-00	<2.0	40	170	7	217.0
AW-3	Jul-00	<2.0	60	130	5.0	195.0
AW-3	Oct-00	<2.0	37	82	2.6	121.6
AW-3	Apr-01	<1.0	39	130	4.7	173.7
AW-3	Oct-01	<1.0	48	110	4.7	162.7
AW-3	Apr-02	0.2J	51.6J	130	2.9	184.5
AW-3	Oct-02	<0.4	45.4J	92	1.5J	138.9
AW-3	Apr-03	<1.0	34	110	1.8J	145.8
AW-3	Oct-03	1.6	120.5J	16	0.2J	138.3
AW-3	Apr-04	2.5	75.4J	10	0.7J	88.6
AW-3	Oct-04	11	100.7J	39	0.5J	151.2
AW-3	Apr-05	12	241.1	40	<0.06	293.1
AW-3	Oct-05	18	162.1	62	0.07J	242.2
AW-3	Apr-06	27	182.9	45	<1.0	254.9
AW-3	Oct-06	18	122.1	28	<1.0	169.1
AW-3	Apr-07	30	121.4	14	<1.0	165.4
AW-3	Oct-07	27	161.6	13	<1.0	201.6
AW-3	Apr-08	12	75J	1.7	<1.0	88.7
AW-3	Oct-08	7	40	<1.0	<1.0	47.0
AW-3	Apr-09	2.9	14	<1.0	<1.0	16.9
AW-3	Oct-09	2.5	5.2	<1.0	<1.0	7.7
AW-3	Apr-10	2.5	5.3	2.7	<1.0	10.5
AW-3	Oct-10	1.1	1.3	<0.5	<0.5	2.4
AW-3	Oct-11	1.2	0.9	<0.5	<0.5	2.1
AW-3	Oct-12	<0.5	<0.5	<0.5	<0.5	ND
AW-3	Oct-13	0.6	<0.5	<0.5	<0.5	0.6
AW-3	Oct-14	<1.0	<1.0	<1.0	<1.0	ND
AW-3	Oct-15	<1.0	<1.0	<1.0	<1.0	ND
AW-3	Oct-16	<1.0	<1.0	<1.0	<1.0	ND
AW-3	Oct-17	0.55J	0.37J / <1.0	<1.0	<1.0	0.92
AW-3	Oct-18	<1.0	<1.0 / <1.0	<1.0	<1.0	ND
AW-3	Oct-19	<1.0	<1.0 / <1.0	<1.0	<1.0	ND
AW-3	Nov-20	<1.0	<1.0 / <1.0	<1.0	<1.0	ND
AW-3	Oct-21	<1.0	<1.0 / <1.0	<1.0	<1.0	ND
AW-4	Oct 98	<2.0	14	140	5.4	159.4
AW-4	Apr 99	<2.0	27	140	4.9	171.9
AW-4	Oct 99	<5.0 (<2.0)	37 (34)	170 (170)	<5.0 (3.7)	107 (107.7)
AW-4	Jan-00	<1.0 (<5.0)	32 (30)	160 (150)	4.6 (<5.0)	196.6 (180)
AW-4	Apr-00	<2.0	35	120	2.9	157.9
AW-4	Jul-00	<2.0	26	130	3.4	159.4
AW-4	Oct-00	<2.0	17	97	2.2	116.2

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MCL (µg/L):		2	70 cis, 100 trans	5	5	
Location	**Sample Date**	**Vinyl Chloride**	**1,2-dichloroethene (c/t)**	**trichloroethene**	**tetrachloroethene**	**TVOCs***
AW-4	Apr-01	<1.0	24	120	2.2	146.2
AW-4	Oct-01	<1.0	18	130	2.0	150.0
AW-4	Apr-02	<1.0	25.6J	160	1.6J	187.2
AW-4	Oct-02	<0.4	49.7J	140	3.1	192.8
AW-4	Mar-03	<1.0 (<1.0)	36.7J (35.7J)	150 (150)	1.3J (1.4J)	188 (187.1)
AW-4	Oct-03	NS	NS	NS	NS	NS
AW-4	Apr-06	NS	NS	NS	NS	NS
AW-4	Oct-06	6	38.3	23	<1.0	66.0
AW-4	Apr-07	4.2	30	19	<1.0	53.2
AW-4	Oct-07	8.7	47	30	<1.0	85.7
AW-4	Apr-08	3	20.1	21	<1.0	44.1
AW-4	Oct-08	3.6	14.2	18	<1.0	35.8
AW-4	Apr-09	4.4 J	31	82	< 1.0	117.4
AW-4	Oct-09	3.4	30	70	<1.0	103.4
AW-4	Apr-10	3.8	28.5	30	<1.0	62.3
AW-4	Oct-10	11 (11)	35 (36)	62 (63)	0.6 (0.6)	108.6 (110.6)
AW-4	Apr-11	7.0	51.9	94	0.7	153.6
AW-4	Oct-11	9.3	64.6	120	0.7	194.6
AW-4	Apr-12	6.7	84.5	130	0.5	221.7
AW-4	Oct-12	6.4	25	38	<0.5	69.4
AW-4	Apr-13	6.8	59.4	120	0.7	187.2
AW-4	Oct-13	8.1	64.7	100	0.8	173.6
AW-4	Apr-14	4.8	42	58	<0.5	106.0
AW-4	Oct-14	4.1	12.2	11.5	<1.0	27.8
AW-4	Apr-15	2.2	17.9	24.9	<1.0	45.0
AW-4	Oct-15	4.2	50.6 / <1.0	96.7	<1.0	151.5
AW-4	Apr-16	1.3 (2.0)	21.4 (23.6) / (<1.0)	20.2 (18.6)	<1.0	42.9 (44.2)
AW-4	Oct-16	1.9	10.5 / <1.0	13.3	<1.0	25.7
AW-4	Apr-17	1.8	27.9 / 1.1	37	<1.0	67.8
AW-4	Oct-17	1.4	4.9 / 2.0	2.9	<1.0	11.2
AW-4	Apr-18	<1.0	2.0 / <1.0	2.6	<1.0	4.6
AW-4	Oct-18	<1.0	3.9 / <1.0	5	<1.0	8.9
AW-4	May-19	2	26.2 / 0.68J	58.6	0.33J	87.8
AW-4	Oct-19	0.82 J	2.2 / 0.65 J	2.3	<1.1	6.0
AW-4	Apr-20	3.4	26.7 / 1.1	59.5	0.50 J	91.2
AW-4	Nov-20	3.7	24.8 / 1.9	46.7	<1.0	77.1
AW-4	Apr-21	<1.0	2.2 / <1.0	3.4	<1.0	5.6
AW-4	Oct-21	0.69 J (0.62 J)	10.6 J / 0.35 J (7.6 J / <1.0)	16.4 J (10.7 J)	<1.0 (<1.0)	28.04 (18.92)
Field Blank	Oct-21	<1.0	<1.0 / <1.0	<1.0	<1.0	ND
Trip Blank (Ascorbic)	Oct-21	<1.0	<1.0 / <1.0	<1.0	<1.0	ND
Trip Blank (HCl)	Oct-21	<1.0	<1.0 / <1.0	<1.0	<1.0	0.4

Note:
µg/L - micrograms per Liter. All results and standards reported in µg/L
* - Non-Detect values represented as 0 for TVOC concentration.
MCL - USEPA Maximum Contaminant Level
NA - Not Applicable, sampling not required. NB - Negated due to blank contamination.
ND - Not detected above reporting limit. NS - Not Sampled.
B - Found in sample at concentration of less than five times the concentration in an associated blank.
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
J+ - Estimated concentration, possibly biased high
UL - Approximate due to biased low sample result concentrations
(##) - Duplicate samples are identified in parenthesis.

Table 8
Summary of Analytical Results for Metals in Water Samples –
October 1998 through October 2021
GE Lancaster Semi-Annual Report
Lancaster, PA

MCL (mg/L):		*/ 0.1	0.005
Location	**Sample Date**	**Nickel**	**Cadmium**
GW-9001	Oct-98	0.0620	0.0083 (0.0083)
GW-9001	Apr-99	0.0660	<0.010
GW-9001	Oct-99	0.0640	<0.010
GW-9001	Jan-00	0.0950	<0.010
GW-9001	Apr-00	0.0590	<0.010
GW-9001	Jul-00	0.0546	<0.010
GW-9001	Oct-00	0.0554	<0.010
GW-9001	Apr-01	0.0578	0.003
GW-9001	Oct-01	0.0601	0.0024
GW-9001	Apr-02	0.0560	0.0044J
GW-9001	Oct-02	0.0582	0.0016J
GW-9001	Apr-03	0.0670	0.0033J
GW-9001	Oct-03	0.0781	<0.00087 (<0.00087)
GW-9001	Apr-04	0.0348	<0.00087
GW-9001	Oct-04	0.0718	<0.00076
GW-9001	Apr-05	0.011	<0.00076
GW-9001	Oct-05	0.0481	<0.00097
GW-9001	Apr-06	0.0509	<0.0050
GW-9001	Apr-07	NS	NS
GW-9001	Oct-07	0.0334	<0.0050
GW-9001	Apr-08	0.0369	<0.0050
GW-9001	Oct-08	0.0316	<0.0050
GW-9001	Apr-09	0.0285	<0.0050
GW-9001	Oct-09	0.0296	<0.0050
GW-9001	Apr-10	0.0295	<0.0050
GW-9001	Oct-10	0.0343	<0.0050
GW-9001	Apr-11	0.0286	<0.0050 (<0.0050)
GW-9001	Apr-12	0.0313	<0.0050
GW-9001	Oct-12	0.0237	<0.0050 (<0.0050)
GW-9001	Apr-13	0.0224	<0.0050 (<0.0050)
GW-9001	Oct-13	0.0259	<0.0050
GW-9001	Apr-14	0.0232	<0.0050
GW-9001	Oct-14	0.0261	<0.0030
GW-9001	Apr-15	0.0265	<0.0030
GW-9001	Oct-15	0.0275	<0.0030
GW-9001	Apr-16	0.0800	<0.0030
GW-9001	Oct-16	0.0637	<0.0030

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MCL (mg/L):		*/ 0.1	0.005
Location	**Sample Date**	**Nickel**	**Cadmium**
GW-9001	Apr-17	0.0297	<0.0030 (<0.0030)
GW-9001	Oct-17	0.0282	0.0018J (0.0018J)
GW-9001	Apr-18	0.0290	0.0021J (0.0021J)
GW-9001	Oct-18	0.0346	0.0014J (0.0016J)
GW-9001	May-19	0.0146	0.0013J (0.0012J)
GW-9001	Oct-19	0.0285	0.0028 J (0.0031)
GW-9001	Apr-20	0.0164 (0.0162)	0.0009 J (0.00087 J)
GW-9001	Nov-20	0.0295 (0.0302)	0.0036 (0.0038)
GW-9001	Apr-21	0.0213 (0.0204)	0.0026 J (0.0027 J)
GW-9001	Oct-21	0.0261	0.0014 J
GW-9020	Oct-18	0.0118	<0.0030
GW-9020	May-19	0.0269	0.0013J
GW-9020	Oct-19	0.0268	0.0028J
GW-9020	Apr-20	0.0213	0.0021 J
GW-9020	Nov-20	0.0295	0.0036
GW-9020	Apr-21	0.0209	0.0028 J
GW-9020	Oct-21	0.0277	0.00052 J
5	Oct-98	0.078	0.0018
5	Apr-99	<0.050	<0.010
5	Oct-99	0.0570	<0.010
5	Jan-00	0.0324	<0.010
5	Apr-00	0.2360	<0.010
5	Jul-00	0.2660	<0.010
5	Oct-00	0.0559	<0.010
5	Apr-01	0.9850	0.0058
5	Oct-01	0.1090	<0.0015
5	Apr-02	0.1540	<0.00094
5	Oct-02	1.5100	0.0102
5	Apr-03	0.3710	0.0019J
5	Oct-03	0.2540J	<0.00087
5	Apr-04	0.2320	<0.00087
5	Oct-04	0.2250	<0.00076
5	Apr-05	0.0296	<0.00076 (<0.00076)
5	Oct-05	0.0692	<0.00097
5	Apr-06	0.0214	<0.0050
5	Oct-06	0.0338	<0.0050
5	Apr-07	0.0269	<0.0050

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MCL (mg/L):		*/ 0.1	0.005
Location	**Sample Date**	**Nickel**	**Cadmium**
5	Oct-07	0.280	<0.0050
5	Apr-08	0.128	<0.0050
5	Oct-08	0.259	<0.0050
5	Apr-09	0.134	< 0.0050
5	Oct-09	0.174	<0.0050
5	Apr-10	0.0276	<0.0050
5	Oct-10	0.0387	<0.0050
5	Apr-11	0.0210	<0.0050 (<0.0050)
5	Apr-12	0.0389	<0.0050
5	Oct-12	0.0385	<0.0050 (<0.0050)
5	Apr-13	0.0816	<0.0050
5	Oct-13	0.208	<0.0050 (<0.0050)
5	Apr-14	0.181	<0.0050
5	Oct-14	0.0367	<0.0030 (<0.0030)
5	Apr-15	0.0325	<0.0030
5	Oct-15	0.0457	<0.0030
5	Apr-16	0.0344	<0.0030
5	Oct-16	0.0457	<0.0030
5	Apr-17	0.0173	<0.0030
5	Oct-17	0.0122	<0.0030
5	Apr-18	0.0350	<0.0030
5	Oct-18	0.0323	<0.0030
5	May-19	0.0175	0.0005J
5	Oct-19	0.0192	0.00042 J
5	Apr-20	0.0185	0.00073 J
5	Nov-20	0.0195	<0.0030
5	Apr-21	0.0203	0.00075 J
5	Oct-21	0.0192	0.00044 J
6	Oct-01	<0.050	<0.0015
6	Apr-02	0.0027	<0.00094
6	Oct-02	0.0056	<0.00094
6	Apr-03	0.002	<0.00094
6	Oct-03	0.0087	<0.00087
6	Apr-04	<0.0038	<0.00087
6	Oct-04	<0.0031	<0.00076
6	Apr-05	0.0042	<0.00076
6	Oct-05	<0.0058	<0.00097

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Summary of Analytical Results for Metals in Water Samples –
October 1998 through October 2021
GE Lancaster Semi-Annual Report
Lancaster, PA

MCL (mg/L):		*/ 0.1	0.005
Location	**Sample Date**	**Nickel**	**Cadmium**
6	Apr-06	< 0.0100	<0.0050
6	Oct-06	< 0.0100	<0.0050
6	Apr-07	< 0.0100	<0.0050
6	Oct-07	< 0.0100	<0.0050
6	Apr-08	< 0.0100	<0.0050
6	Oct-08	< 0.0100	<0.0050
6	Apr-09	< 0.0100	< 0.0050
6	Oct-09	< 0.0100	<0.0050
6	Apr-10	< 0.0100	<0.0050
6	Oct-10	<0.0100	<0.0050
6	Oct-12	<0.0100	<0.0050
6	Oct-13	<0.0100	<0.0050
6	Oct-14	<0.0100	<0.0030
6	Oct-15	<0.0100	<0.0030
6	Oct-16	<0.0100	<0.0030
6	Oct-17	<0.0100	<0.0030
6	Oct-18	0.0016	<0.0030
6	Oct-19	0.0036	<0.0030
6	Nov-20	0.0023J	0.00035J
6	Oct-21	<0.01	0..00043 J
14	Oct-98	<0.050	<0.0015
14	Apr-99	<0.050	<0.010
14	Oct-99	<0.050	<0.010
14	Jan-00	<0.050	<0.010
14	Apr-00	<0.050	<0.010
14	Jul-00	0.0225	<0.0036 (<0.0036)
14	Oct-00	<0.050	<0.010 (<0.010)
14	Apr-01	1.290	<0.0015
14	Oct-01	1.170	<0.0015
14	Apr-02	1.120	<0.00094
14	Oct-02	5.660	<0.00094
14	Apr-03	3.500	<0.00094
14	Oct-03	1.170J	<0.00087
14	Apr-04	0.0688	<0.00087
14	Oct-04	0.1400	<0.00076
14	Apr-05	0.134	<0.00076
14	Oct-05	0.0915	<0.00097

Table 8
Summary of Analytical Results for Metals in Water Samples –
October 1998 through October 2021
GE Lancaster Semi-Annual Report
Lancaster, PA

MCL (mg/L):		*/ 0.1	0.005
Location	**Sample Date**	**Nickel**	**Cadmium**
14	Apr-06	0.0757	<0.0050
14	Oct-06	0.0421	<0.0050
14	Apr-07	0.0647	<0.0050
14	Oct-07	0.0154	<0.0050
14	Apr-08	0.0411	<0.0050 (<0.0050)
14	Oct-08	0.0418	<0.0050
14	Apr-09	0.0146	<0.0050
14	Oct-09	0.0415	<0.0050
14	Apr-10	0.0439	<0.0050
14	Oct-10	0.0329	<0.0050
14	Apr-11	0.0378	<0.0050 (<0.0050)
14	Apr-12	<0.0100	<0.0050
14	Oct-12	0.0108	<0.0050
14	Apr-13	0.0103	<0.0050
14	Oct-13	0.0105	<0.0050
14	Apr-14	<0.0100	<0.0050
14	Oct-14	<0.0100	<0.0030
14	Apr-15	<0.0100	<0.0030
14	Oct-15	<0.0100	<0.0030
14	Apr-16	<0.0100	<0.0030
14	Oct-16	0.0102	<0.0030
14	Apr-17	0.0104	<0.0030
14	Oct-17	0.0034	<0.0030
14	Apr-18	0.0045	<0.0030
14	Oct-18	0.0046	<0.0030
14	May-19	0.0055	0.0071J
14	Oct-19	0.0022	<0.0030
14	Apr-20	0.0089 J	<0.0030
14	Nov-20	0.0058J	<0.0030
14	Apr-21	0.0039 J	0.00080 J
14	Oct-21	0.0117	0.00045 J
15	Oct-98	0.539	<0.0015
15	Apr-99	0.797	<0.010
15	Oct-99	1.20	<0.010
15	Jan-00	1.13	<0.010
15	Apr-00	1.57	<0.010
15	Jul-00	1.81	<0.010

Table 8
Summary of Analytical Results for Metals in Water Samples –
October 1998 through October 2021
GE Lancaster Semi-Annual Report
Lancaster, PA

MCL (mg/L):		*/ 0.1	0.005
Location	**Sample Date**	**Nickel**	**Cadmium**
15	Oct-00	2.53	<0.010
15	Apr-01	0.93	0.0018B (0.0024B)
15	Oct-01	5.95	<0.0015
15	Apr-02	2.12	<0.00094
15	Oct-02	1.33	<0.00094 (<0.00094)
15	Apr-03	2.76	<0.00094
15	Oct-03	7.01	<0.00087
15	Apr-04	5.37	<0.00087
15	Oct-04	3.54	<0.00076
15	Apr-05	4.91	<0.00076
15	Oct-05	3.18	<0.00097
15	Apr-06	2.9	<0.0050
15	Oct-06	2.86	<0.0050
15	Apr-07	2.31	<0.0050
15	Oct-07	1.52	<0.0050
15	Apr-08	1.06	<0.0050
15	Oct-08	0.689	<0.0050
15	Apr-09	0.789	<0.0050
15	Oct-09	0.114	<0.0050
15	Apr-10	0.255	<0.0050
15	Oct-10	0.0445	<0.0050
15	Oct-12	0.0112	<0.0050
15	Oct-13	0.0209	<0.0050
15	Oct-14	0.0136	<0.0030
15	Oct-15	<0.0100	<0.0030
15	Oct-16	0.0470	<0.0030
15	Oct-17	0.0084	<0.0030
15	Oct-18	0.0129	<0.0030
15	Oct-19	0.0502	<0.0030
15	Nov-20	0.0689	0.0017J
15	Oct-21	0.0436	<0.003
SPRING-1	Oct-98	<0.050	0.0173
SPRING-1	Apr-99	<0.050	0.0180
SPRING-1	Oct-99	0.059	0.0190
SPRING-1	Jan-00	0.07	0.0340
SPRING-1	Apr-00	0.212	0.0460
SPRING-1	Jul-00	< 0.050	0.0350

Table 8
Summary of Analytical Results for Metals in Water Samples –
October 1998 through October 2021
GE Lancaster Semi-Annual Report
Lancaster, PA

MCL (mg/L):		*/ 0.1	0.005
Location	**Sample Date**	**Nickel**	**Cadmium**
SPRING-1	Oct-00	0.0636	0.0333
SPRING-1	Apr-01	0.101	0.0420
SPRING-1	Oct-01	0.0696	0.0317
SPRING-1	Apr-02	0.0454	0.0229
SPRING-1	Oct-02	0.0247	0.0214
SPRING-1	Apr-03	0.271	0.561 (0.558)
SPRING-1	Oct-03	0.122	0.0604
SPRING-1	Apr-04	0.118	0.0538 (0.0545)
SPRING-1	Oct-04	0.365	0.0628
SPRING-1	Apr-05	0.540	0.0516
SPRING-1	Oct-05	0.344	0.0594
SPRING-1	Apr-06	0.0677	0.0501
SPRING-1	Oct-06	0.1840	0.0565
SPRING-1	Apr-07	0.1010	0.0690
SPRING-1	Oct-07	0.0538	0.0505
SPRING-1	Apr-08	0.0777	0.0562
SPRING-1	Oct-08	0.0554	0.0488
SPRING-1	Apr-09	< 0.126	< 0.0619 (< 0.0619)
SPRING-1	Oct-09	0.2480	0.0611
SPRING-1	Apr-10	0.1050	0.0730 (0.0732)
SPRING-1	Oct-10	0.115	0.0647
SPRING-1	Apr-11	0.290	0.0679
SPRING-1	Apr-12	0.069	0.0551 (0.0547)
SPRING-1	Oct-12	0.131	0.0524
SPRING-1	Apr-13	0.070	0.0550
SPRING-1	Oct-13	0.263	0.0548 (0.0550)
SPRING-1	Apr-14	0.251	0.0741J (0.0732J)
SPRING-1	Oct-14	0.111	0.0586
SPRING-1	Apr-15	0.0813	0.0664
SPRING-1	Oct-15	0.0734	0.0635
SPRING-1	Apr-16	0.1170	0.0664
SPRING-1	Oct-16	0.0573	0.0544
SPRING-1	Apr-17	0.186	0.0706
SPRING-1	Oct-17	0.0495	0.0496
SPRING-1	Apr-18	0.0770	0.0648
SPRING-1	Oct-18	1.590	0.166
SPRING-1	May-19	0.278	0.072

Table 8
Summary of Analytical Results for Metals in Water Samples –
October 1998 through October 2021
GE Lancaster Semi-Annual Report
Lancaster, PA

MCL (mg/L):		*/ 0.1	0.005
Location	**Sample Date**	**Nickel**	**Cadmium**
SPRING-1	Oct-19	0.046	0.0398
SPRING-1	Apr-20	0.199	0.044
SPRING-1	Nov-20	0.0443	0.0281
SPRING-1	Apr-21	0.132	0.0487
SPRING-1	Oct-21	0.197	0.0482
AW-4	Oct-98	<0.050	0.0058
AW-4	Apr-99	<0.050	<0.010
AW-4	Oct-99	<0.050	<0.010 (<0.010)
AW-4	Jan-00	<0.050	0.012 (0.011)
AW-4	Apr-00	<0.050	<0.010
AW-4	Jul-00	<0.050	<0.010
AW-4	Oct-00	<0.050	<0.010
AW-4	Apr-01	0.0552	0.0094
AW-4	Oct-01	0.0522	0.0092
AW-4	Apr-02	0.0426	0.0048J
AW-4	Oct-02	0.0263	0.0021J
AW-4	Mar-03	0.054	0.0076J (0.0077J)
AW-4	Oct-03	NS	NS
AW-4	Oct-06	0.816	<0.0050
AW-4	Apr-07	0.791	<0.0051 (<0.0050)
AW-4	Oct-07	0.486	<0.0050
AW-4	Apr-08	0.293	<0.0050
AW-4	Oct-08	0.115	<0.0050
AW-4	Apr-09	0.79	< 0.0050
AW-4	Oct-09	0.0882	<0.0050
AW-4	Apr-09	0.140	<0.0050
AW-4	Oct-10	0.139	<0.0050 (<0.0050)
AW-4	Apr-11	0.115	<0.0050
AW-4	Apr-12	0.166	<0.0050
AW-4	Oct-12	0.183	<0.0050
AW-4	Apr-13	0.0674	<0.0050
AW-4	Oct-13	0.0787	<0.0050
AW-4	Apr-14	0.0558	<0.0050
AW-4	Oct-14	0.0337	<0.0030
AW-4	Apr-15	0.1550	0.0086 (Total)
AW-4	Oct-15	0.1400	0.0044
AW-4	Apr-16	0.2160	<0.0030 (<0.0030)

Table 8
Summary of Analytical Results for Metals in Water Samples –
October 1998 through October 2021
GE Lancaster Semi-Annual Report
Lancaster, PA

MCL (mg/L):		*/ 0.1	0.005
Location	**Sample Date**	**Nickel**	**Cadmium**
AW-4	Oct-16	0.2200	<0.0030 (<0.0030)
AW-4	Apr-17	0.177	<0.0030
AW-4	Oct-17	0.196	0.0016J
AW-4	Apr-18	0.185	<0.0030
AW-4	Oct-18	0.101	<0.0030
AW-4	May-19	0.086	0.0012J
AW-4	Oct-19	0.033	<0.0030
AW-4	Apr-20	0.130	0.0012J
AW-4	Nov-20	0.202	0.00048J
AW-4	Apr-21	0.068	0.0042
AW-4	Oct-21	0.0408 (0.0414)	0.00074 J (0.00071 J)

mg/L - milligrams per Liter. All results and standards reported in mg/L

* - The USEPA has remanded the MCL for nickel. The value is Pennsylvania DEP Act 2 Statewide Health Standard / Medium-Specific Concentration (MSC) for groundwater for Used Residential Aquifers (TDS ≤ 2500), which is a lifetime health advisory level.

NA - Not Applicable, sampling not required.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

L - Approximate due to QA/QC deficiency or detection below reporting limit (Biased Low)

MCL - Maximum Contaminant Level

NS - Not Sampled

(##) - Duplicate sample results are identified in parenthesis.

Gray shading indicates a result above MSC or Lifetime Health Advisory Level.

Table 9
Summary of Statistical Evaluation through October 2021
GE Lancaster Annual Report
Lancaster, PA

cis-1,2-DCE MCL = 2 ug/L	Trend Analysis		Confidence Interval Band > MCL?
	Increasing Trend?	Decreasing Trend?	
Compliance Wells			
Well 7D	FALSE	FALSE	NA
Well 10D	FALSE	**TRUE**	NA
Well-12D	FALSE	FALSE	NA
GW-9008	FALSE	FALSE	**TRUE**
AW-4	FALSE	**TRUE**	NA
Spring 1*	**TRUE**	FALSE	NA
Recovery Wells			
GW-9001	FALSE	**TRUE**	NA
GW-9006	**TRUE**	FALSE	**TRUE**
Well 5**	FALSE	**TRUE**	NA
Well 14	FALSE	FALSE	**TRUE**
Well 18	**TRUE**	FALSE	**TRUE**
GW-9020	FALSE	FALSE	**TRUE**
Other Wells			
GW-9004	FALSE	**TRUE**	**TRUE**
GW-9007	FALSE	FALSE	NA
Well 6	FALSE	FALSE	NA
Well 11S	FALSE	FALSE	NA
Well 15	FALSE	FALSE	NA
AW-3	FALSE	FALSE	NA

* Spring-1 is also a recovery point
** Well 5 is not curently used as a recovery well
NA: Confidence interval band less than MCL

Table 9
Summary of Statistical Evaluation through October 2021
GE Lancaster Annual Report
Lancaster, PA

Trichloroethene MCL = 5 ug/L	Trend Analysis		Confidence Interval Band > MCL?
	Increasing Trend?	Decreasing Trend?	
Compliance Wells			
Well 7D	FALSE	FALSE	NA
Well 10D	FALSE	FALSE	NA
Well-12D	FALSE	FALSE	NA
GW-9008	FALSE	FALSE	**TRUE**
AW-4	FALSE	**TRUE**	NA
Spring 1*	FALSE	FALSE	**TRUE**
Recovery Wells			
GW-9001	FALSE	**TRUE**	**TRUE**
GW-9006	FALSE	**TRUE**	NA
Well 5**	FALSE	**TRUE**	NA
Well 14	FALSE	FALSE	NA
Well 18	FALSE	FALSE	**TRUE**
GW-9020	FALSE	**TRUE**	NA
Other Wells			
GW-9004	FALSE	**TRUE**	**TRUE**
GW-9007	FALSE	FALSE	NA
Well 6	FALSE	FALSE	NA
Well 11S	FALSE	FALSE	NA
Well 15	FALSE	FALSE	NA
AW-3	FALSE	FALSE	NA

* Spring-1 is also a recovery point
** Well 5 is not curently used as a recovery well
NA: Confidence interval band less than MCL

Table 9
Summary of Statistical Evaluation through October 2021
GE Lancaster Annual Report
Lancaster, PA

Tetrachloroethene MCL = 5 ug/L	Trend Analysis		Confidence Interval Band > MCL?
	Increasing Trend?	Decreasing Trend?	
Compliance Wells			
Well 7D	FALSE	FALSE	NA
Well 10D	FALSE	FALSE	NA
Well-12D	FALSE	FALSE	NA
GW-9008	**TRUE*** **	FALSE	NA
AW-4	FALSE	FALSE	NA
Spring 1*	FALSE	FALSE	NA
Recovery Wells			
GW-9001	FALSE	**TRUE**	NA
GW-9006	FALSE	FALSE	**TRUE**
Well 5**	FALSE	**TRUE**	NA
Well 14	**TRUE*** **	FALSE	NA
Well 18	FALSE	FALSE	**TRUE**
GW-9020	FALSE	FALSE	NA
Other Wells			
GW-9004	FALSE	FALSE	NA
GW-9007	FALSE	FALSE	NA
Well 6	FALSE	FALSE	NA
Well 11S	FALSE	FALSE	NA
Well 15	FALSE	FALSE	NA
AW-3	FALSE	FALSE	NA

* Spring-1 is also a recovery point
** Well 5 is not curently used as a recovery well
*** Increasing trend were strictly from artifacts due to a change to higher reporting limits for non-detects thaty began around 2015. In reality, these are stable or decreasing; see Appendix F.
NA: Confidence interval band less than MCL

Table 9
Summary of Statistical Evaluation through October 2021
GE Lancaster Annual Report
Lancaster, PA

Vinyl Chloride MCL = 2 ug/L	Trend Analysis		Confidence Interval Band > MCL?
	Increasing Trend?	Decreasing Trend?	
Compliance Wells			
Well 7D	FALSE	FALSE	NA
Well 10D	FALSE	**TRUE**	NA
Well-12D	FALSE	FALSE	NA
GW-9008	FALSE	FALSE	**TRUE**
AW-4	FALSE	**TRUE**	NA
Spring 1*	FALSE	FALSE	NA
Recovery Wells			
GW 9001	FALSE	FALSE	**TRUE**
GW-9006	FALSE	FALSE	NA
Well 5**	FALSE	FALSE	**TRUE**
Well 14	FALSE	FALSE	**TRUE**
Well 18	FALSE	FALSE	NA
GW-9020	FALSE	FALSE	NA
Other Wells			
GW-9004	FALSE	**TRUE**	**TRUE**
GW-9007	FALSE	FALSE	NA
Well 6	FALSE	FALSE	NA
Well 11S	FALSE	FALSE	NA
Well 15	FALSE	FALSE	NA
AW-3	FALSE	FALSE	NA

* Spring-1 is also a recovery point
** Well 5 is not curently used as a recovery well
NA: Confidence interval band less than MCL

Table 10
Groundwater Sampling Program Schedule for 2022
GE Lancaster Facility
Lancaster, Pennsylvania

	Quarterly Sampling Event (January, April, July, October)	Semi- Annual Sampling Event (April)	Annual Sampling Event (October)
Point of Compliance Monitoring Wells/Springs			
7D			X
10D		X	X
12D			X
Spring 1[(1)]		X	X
AW-4[(2)]		X	X
GW-9008		X	X
Additional Monitoring Wells/Springs			
GW-9001[(1)]		X	X
GW-9004		X	X
GW-9006[(1)]		X	X
GW-9007			X
GW-9020		X	X
5		X	X
6			X
11S			X
14[(1)]		X	X
15			X
18[(1)]		X	X
AW-3[(2)]			X
Residential Well			
(b) (9) [redacted]	X	X	X
			X

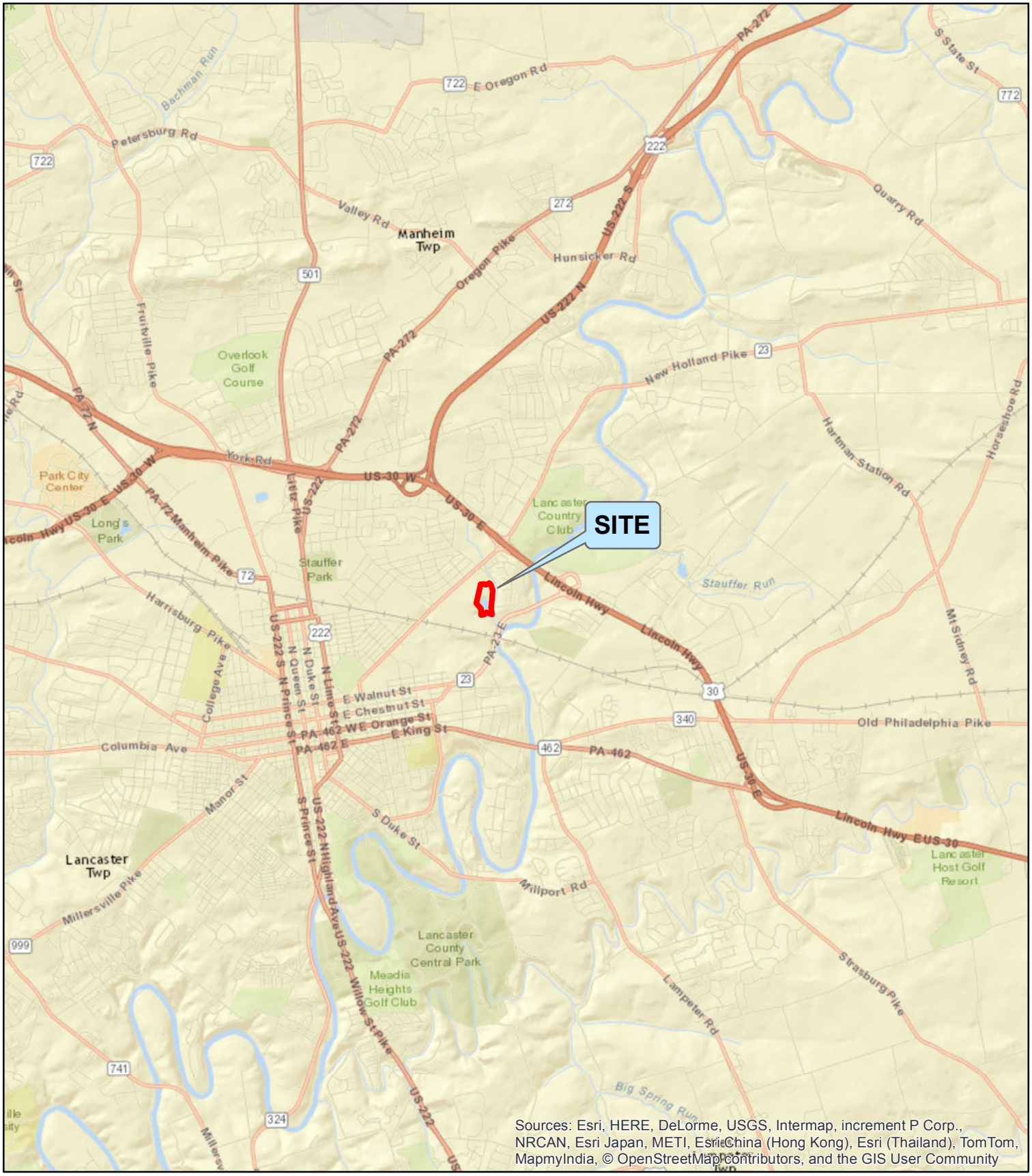
Notes:
Laboratory Analytical Methods for Residential Well: EPA Method 524.2 (VOCs) and EPA Method 200.7/200.8 (metals)
Laboratory Analytical Methods for Recover points and monitoring wells: EPA Method 8260B) (VOCs) and EPA Method 6010 (metals)

The residential well at 1453 Pleasure Road will be sampled quarterly: influent sample prior to treatment, midfluent sample between the two cabon canisters, and one efflucent sample. The sample will be analyzed for site related volatile organice compounds. The post-treatment sample will be also analyzed for site related total metals (cadmium and nickel).

(1) - Denotes ground water recovery well/spring

(2) - Denotes a recovery point that is shut down

FIGURES



S:\03-Projects\Intercompany\Tt GEO\GEOMM Project\Lancaster\Documents\Reports\2014\Annual\Figures\Figure 1 - Site Location Plan.mxd

Legend

Facility Boundary

0 0.3 0.6 1.2 1.8 2.4 Miles

1 inch = 1 miles

N

Figure 1
Site Location Plan
GE Lancaster Facility
Pleasure Road
Lancaster, Pennsylvania

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Newark, DE 19713
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Legend

- Former Recovery Well Location with Monitoring Well
- Monitoring Well Location
- Operating Recovery Well
- Spring Monitoring Station and Recovery Point
- Spring Monitoring Station
- Surface Water Monitoring Station Location
- Residential Well, location is approximate
- Quarry Locations (Closed)
- Facility Boundary
- Treatment Plant

SW-1
8
Pleasure Road
7D
3
Upper Lagoon Area
10S
10D
16
15
5
11S
11D
14
6
12D
12S
SW-9001
1
9D
9S
13
Lower Lagoon Area
3D
3S
SW-2
SPRING 2
IP-02
2
AW-1
IP-01
AW-3,4
GW-9004
GW-9002
4
SW-9002
18
(b) (9)
PA 23
GW-9008
GW-9006
SW-9003
Deerford Road
Conestoga River
GW-9007
New Holland Ave
BW-1
BW-9
BW-6
Burle Industries Inc.
BW-5
GWRTS Treatment Building
BW-3
BW-4D
BW-4S
BW-2D
BW-2S
Amtrack
N

GW-9020
SPRING 2
IP-01
IP-02
GW-9001
AW-1
AW-3,4
2
SPRING 1

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

S:\03-Projects\Intercompany\TT GEO\GE\OMM Project\Lancaster\Reports\2018\Annual\Figures\Figure 2 General Site Plan.mxd

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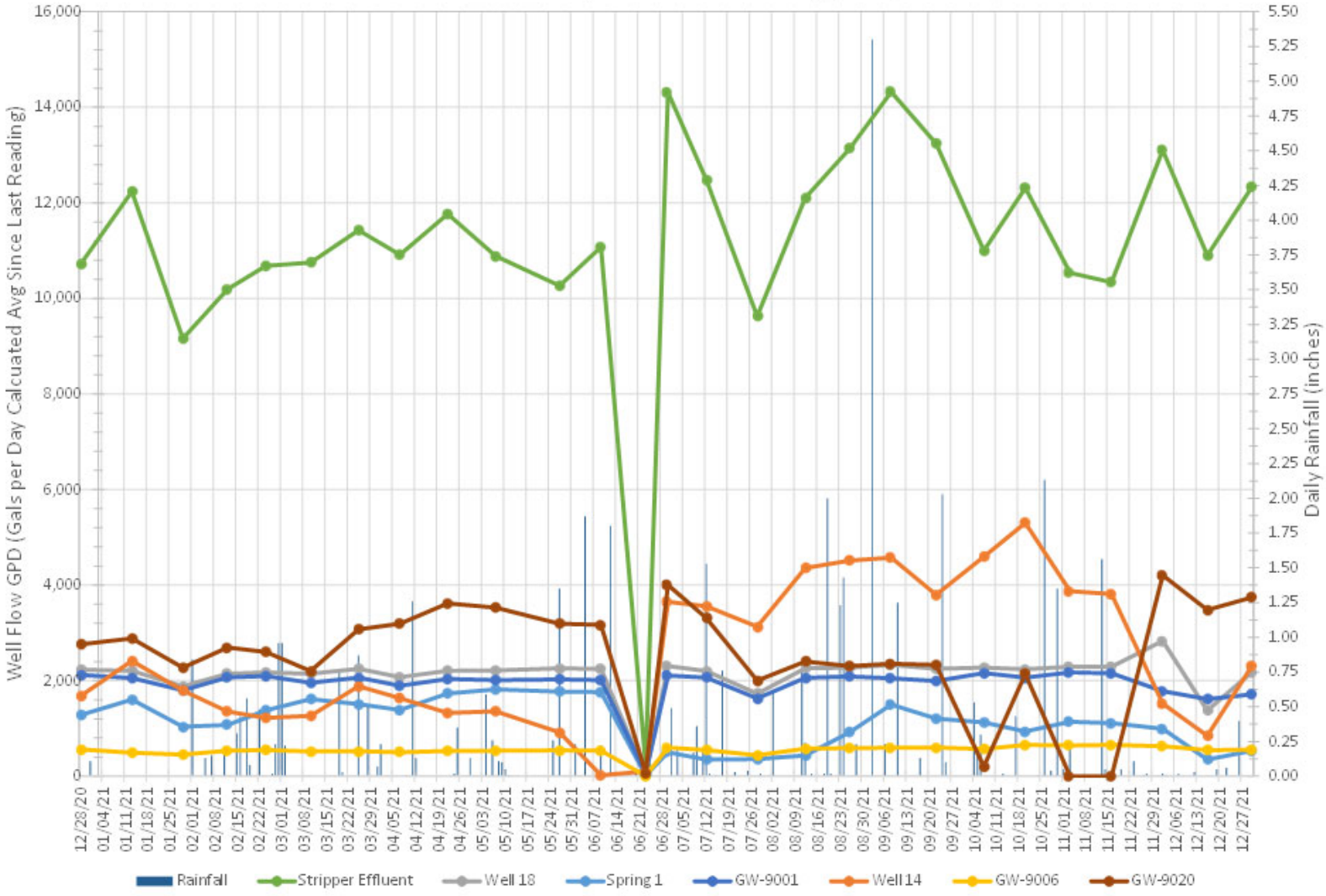
0 200 400 800 1,200 1,600 Feet

1 in = 300 ft

Figure 2
General Site Plan - GE Lancaster Facility
Pleasure Road, Lancaster, Pennsylvania

Figure 3

GE-Lancaster - 2021 Annual Report - Flow Tracking (GPD) vs Daily Rainfall



Legend

- Deep Bedrock Well
- Shallow Bedrock Well (Elevations in ft msl)
- Pumping Wells
- Shallow Groundwater Contours in ft msl
- Quarry Outline
- Facility Outline
- Treatment Plant

ft msl = feet above mean sea level
NM = Not measured
NA = Not accessible

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0 150 300 600 900 1,200 Feet

1 in = 317 ft

Figure 4
Potentiometric Surface in the Shallow Bedrock Aquifer
GE Lancaster Facility - October 2021
Pleasure Road, Lancaster, Pennsylvania

Document Path: S:\06_Technical_Documents\7387_GE_Lancaster\Figure 4 - SHBR Contours 10_2021.mxd

Legend

- Deep Bedrock Well
- Shallow Bedrock Well (Elevations in ft msl)
- Pumping Wells
- Deep Groundwater Contours in ft msl
- Quarry Outline
- Facility Outline
- Treatment Plant

ft msl = feet above mean sea level
NM = Not measured
NA = Not accessible

SW-1
8
7D 278.95
7S
10D 280.416
10S
15
16
5
14 159.247
11D 287.146
11S
12D 268.293
6
12S
1
BW-1 318.934
BW-9 314.121
13 297.114
9S
9D 268.707
GW-9020 NM
3D Artesian
3S
GW-9001 79.435
IP-01 NM
SW-2
IP-02 NM
AW-2S
GW-9004 252.6222
AW-2D 262.694
Spring-1
2
AW-3
AW-1
GW-9002 271.01
AW-4
SW-9002
4
18 NA
BW-6
BW-5
BW-3
BW-4S
BW-4D 310.78
BW-2S
BW-2D 298.867
GW-9008 255.96
GW-9006 -3.79
SW-9003
GW-9007 260.428

240 220 280 260 300 80 60 100 120 140 160 180 200 220

N

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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0 150 300 600 900 1,200 Feet

1 in = 317 ft

Figure 5
Potentiometric Surface in the Deep Bedrock Aquifer
GE Lancaster Facility - October 2021
Pleasure Road, Lancaster, Pennsylvania

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0 150 300 600 900 1,200 Feet

1 in = 317 ft

Figure 6
1,2-Dichloroethene Results
GE Lancaster Facility - October 2021
Pleasure Road, Lancaster, Pennsylvania

Legend

- Operating Recovery Well, Concentration in µg/L
- Monitoring Location, Concentration in µg/L
- Monitoring Location, Not Sampled
- Quarry Outline
- Facility Outline
- Treatment Plant

Red Font Indicates Exceedance of MCL (5 ug/L)
ug/L = micrograms per liter
J = Concentration below method quantitation limit
J+ = Estimated, possibly biased high

SW-1
8
7D <1.0
7S
10D 1.1 J+
16
15 <1.0
10S
5 34.2
14 3.5
12D <1.0
11S
6 1.5
11D
12S
1
BW-1
9D
9S
13
BW-9
GW-9020 60.1
3D
SW-2
3S
AW-2S
BW-6
IP-02
AW-4 16.4 J+ (10.7 J+)
BW-5
AW-2D
IP-01
GW-9001 944
Spring-1 32
BW-3
2
GW-9002
AW-3 <1.0
AW-1
GW-9004 34.9
4
SW-9002
GW-9008 27.9
BW-4S
18 157
BW-4D
BW-2S
BW-2D
SW-9003
GW-9006 5.0 J
GW-9007 0.30 J

N

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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240 Continental Drive, Suite 200
Newark, DE 19713
Phone: (302) 738-7551
Toll Free: (800) 462-0910
www.tetratech.com

0 150 300 600 900 1,200 Feet

1 in = 317 ft

Figure 7
Trichloroethene Results
GE Lancaster Facility - October 2021
Pleasure Road, Lancaster, Pennsylvania

Legend

- Operating Recovery Well, Concentration in µg/L
- Monitoring Location, Concentration in µg/L
- Monitoring Location, Not Sampled
- Quarry Outline
- Facility Outline
- Treatment Plant

Red Font Indicates Exceedance of MCL (2 µg/L)
µg/L = micrograms per liter
J = Concentration below method quantitation limit

SW-1
8
7D 1.9
7S
10D 0.31 J
10S
15 <1.0
16
5 2080
14 0.61 J
11S
11D
12D <1.0
12S
6 <1.0
1
9D
9S
13
3D
3S
SW-2
GW-9020 29.4
AW-4 0.69 J (0.62 J)
IP-01
IP-02
GW-9001 8.5
AW-2S
AW-3 <1.0
2
AW-2D
AW-1
GW-9004 6.6
GW-9002
4
Spring-1 <1.0
SW-9002
18 0.92 J
GW-9008 16.4
GW-9006 0.31 J
SW-9003
GW-9007 <1.0
BW-1
BW-9
BW-6
BW-5
BW-3
BW-4S
BW-4D
BW-2S
BW-2D
N

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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0 150 300 600 900 1,200 Feet

1 in = 317 ft

Figure 8
Vinyl Chloride Results
GE Lancaster Facility - October 2021
Pleasure Road, Lancaster, Pennsylvania

Legend

- Operating Recovery Well, Concentration in µg/L
- Monitoring Location, Concentration in µg/L
- Monitoring Location, Not Sampled
- Quarry Outline
- Facility Outline
- Treatment Plant

Red Font Indicates Exceedance of MCL (5 µg/L)
µg/L = micrograms per liter
J = Concentration below method quantitation limit

SW-1
8
7D <1.0
7S
10S
15 <1.0
16
10D <1.0
14 <1.0
5 <1.0
11S
11D
12D <1.0
6 <1.0
12S
1
BW-1
9D
9S
13
BW-9
3D
SW-2
Spring-1 1
GW-9020 <1.0
3S
BW-6
IP-02
IP-01
AW-3 <1.0
AW-4 <1.0 (<1.0)
BW-5
GW-9001 2.7
BW-3
2
AW-2S
GW-9004 <1.0
GW-9002
4
AW-2D
SW-9002
AW-1
GW-9008 <1.0
18 7.9
BW-4S
BW-4D
BW-2S
BW-2D
GW-9006 23.3
SW-9003
N
GW-9007 <1.0

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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0 150 300 600 900 1,200 Feet

1 in = 317 ft

Figure 9
Tetrachloroethene Results
GE Lancaster Facility - October 2021
Pleasure Road, Lancaster, Pennsylvania

APPENDIX A

Quarterly Flow and Water Production Data (First Quarter – Fourth Quarter 2021)

GE LANCASTER FACILITY
LANCASTER, PA

Quarterly Flow Water Production Data
First Quarter-Fourth Quarter 2021

Quarterly Flows from Flow Meters at Each Recovery Point (gallons)

	Spring1	14	18	GW-9006	GW-9001	GW-9020	Well Total
1qtr21	119,080	146,912	185,380	44,440	174,160	228,313	898,285
2qtr21	133,310	107,041	184,370	44,610	167,630	282,692	919,653
3qtr21	65,920	333,943	181,620	46,660	165,540	203,310	996,993
4qtr21	87,810	310,001	220,110	60,080	192,710	199,312	1,070,023
Total	**406,120**	**897,897**	**771,480**	**195,790**	**700,040**	**913,627**	**3,884,954**
% Contribution to total flow	10.45%	23.11%	19.86%	5.04%	18.02%	23.52%	100.0%

Quarterly Flow Measurements from the Air Stripper Effluent Flow Meter (gallons)

	Total Gallons
1qtr21	935,164
2qtr21	998,172
3qtr21	1,040,912
4qtr21	1,141,862
Total	**4,116,110**

APPENDIX B

Groundwater Sampling Field Logs Fourth Quarter 2021

PROJECT NAME:	GE-LANCASTER	WELL DESIGNATION: RECOVERY WELL	GW-9001	DATE:	10/7/2021
PROJECT NO:	103P6888	SAMPLE DESIGNATION:	GW-9001	ANALYSES:	VOC's/ Dissolved Metals See Report

VOLUME OF WATER TO BE PURGED: {Formula: (1)-(2)=(3); (3)x(4)=(5); (5)x(6)=(7); (7)+(8)=(9)}

(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)
	-		=		X		=		X	3	=		÷		=	
Total Well Depth from TOC (feet)		Depth to water from TOC (feet)		Column of water (feet)		Volume Conversion from table (gal/ft)		Well Volume (gallons)		Number of volumes to purge		Total volume to purge (gallons)		Purge rate (gallons per minute [GPM])		Purge time (minutes)

VOLUME CONVERSION

Well Diameter_____

Casing Diameter	Gallons/Foot
1"	0.040
2"	0.163
4"	0.653
6"	1.469
8"	2.611
10"	4.080

FIELD PARAMETER	UNITS	INITIAL*	First	Second		10 min before FINAL	5 min before FINAL	FINAL	Stabilized (X)	Stabilization Range
Time	Military Time	1245								N/A
Total Purge Time	Minutes	0								N/A
Temp	°C	14.02								N/A
Cond	ms/cm	1.720								± 3%
DO	mg/L	1.23								± 10%
pH	standard units	7.28								± 0.1
ORP	mv	63.2								± 10%
Turbidity	NTU	NM								± 10%
Salinity	%	NM								N/A
Description of	note color and	Clear & Colorless								N/A
Depth to Water	feet below TOC	195.05							N/A	N/A
Purge Rate	GPM								N/A	N/A
Pump Depth	feet below TOC								N/A	N/A

SAMPLING EQUIPMENT *(Check equipment used)*

- ☐ Submersible Pump
- ☐ Peristaltic Pump
- ☐ Bailer
- ☐ Water Quality Meter

Make/Model:

Horiba U-50

SAMPLED USING (CIRCLE) BAILER / SAMPLING PORT

TIME PURGE STARTED: TIME PURGE COMPLETED: TOTAL VOLUME ACTUALLY PURGED: Gallons

SAMPLE COLLECTION CRITERIA *(check all that are appropriate)*

____ COLLECTED AFTER PARAMETERS STABILIZATION
____ COLLECTED AFTER 3 WELL VOLUMES PURGED
____ WELL DRY - COLLECTED AFTER 2 HOURS OF RECOVERY

SAMPLE TIME: 1245

DEPTH TO WATER AT TIME OF SAMPLING: 195.05

General Notes (Including additional water level readings, purge rates, pump adjustments, etc. Use additional forms and log books as necessary.):

WELL INFORMATION:

Well Type (Screened or Open Borehole):

Top of Screened or Open Interval (ft below TOC):

Bottom of Screened or Open Interval (ft below TOC):

Pump Depth at Start of Purge (ft below TOC):_____

Pump Depth at End of Purge (ft below TOC):_____

Did the water level drop below the top of screen? (CIRCLE) YES / NO

LOGGED BY: JRD SAMPLED BY: JRD Q/A SAMPLE: NA Q/A SAMPLE TIME: NA

Procedural Notes:

* - Initial reading taken from first water produced during purge

Final three reading to be taken within 5 minutes of each other at the end of the purge time.

If a well pumps dry, it is to be allowed to recharge for two hours and then sampled.

Final reading should reflect information at time of sampling

All times with the pump turned off for transport of IDW to the plant should be recorded

IDW Transport to Plant Times and Estimated Volumes:

PROJECT NAME:	**GE-LANCASTER**	WELL DESIGNATION: RECOVERY WELL	**GW-9004**	DATE:	**10/5/2021 - 10/6/2021**
PROJECT NO:	**103P6888**	SAMPLE DESIGNATION:	**GW-9004**	ANALYSES:	**VOC's** **See Report**

VOLUME OF WATER TO BE PURGED: {Formula: (1)-(2)=(3); (3)x(4)=(5); (5)x(6)=(7); (7)+(8)=(9)}

(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)
300	-	**34.41**	=	**265.59**	X	**0.653**	=	**173**	X	**3**	=	**520**	÷	**2**	=	**260.1**
Total Well Depth from TOC (feet)		Depth to water from TOC (feet)		Column of water (feet)		Volume Conversion from table (gal/ft)		Well Volume (gallons)		Number of volumes to purge		Total volume to purge (gallons)		Purge rate (gallons per minute [GPM])		Purge time (minutes)

VOLUME CONVERSION

Well Diameter_____

Casing Diameter	Gallons/Foot
1"	0.040
2"	0.163
4"	0.653
6"	1.469
8"	2.611
10"	4.080

FIELD PARAMETER	UNITS	10/5/2021INITIAL*	First	10/6/2021 Start	Second	10 min before FINAL	5 min before FINAL	FINAL	Stabilized (X)	Stabilization Range
Time	Military Time	1530	1630	1000	1230	1235	1240	1245		N/A
Total Purge Time	Minutes	0	60	60	250	255	265	275		N/A
Temp	°C	16.08	11.23	15.69	17.97	17.97	17.98	17.98		N/A
Cond	ms/cm	1.330	1.350	1.370	1.270	1.27	1.27	1.270		± 3%
DO	mg/L	3.56	6.29	4.64	10.19	10.08	10.08	10.08		± 10%
pH	standard units	7.42	7.51	7.71	7.61	7.61	7.61	7.61		± 0.1
ORP	mv	-189.0	-192.0	-125.0	-107.0	-107.0	-108.0	-108.0		± 10%
Turbidity	NTU	NM	NM	NM	NM	NM	NM	NM		± 10%
Salinity	%	NM	NM	NM	NM	NM	NM	NM		N/A
Description of	note color and	Clear & Colorless	Clear & Colorless	Clear & Colorless	Clear & Colorless	Clear & Colorless	Clear & Colorless	Clear & Colorless		N/A
Depth to Water	feet below TOC	34.41	90.25	92.78	92.97	93.03	93.03	93.04	N/A	N/A
Purge Rate	GPM	2	2	1.5	1.5	1.5	1.5	1.5	N/A	N/A
Pump Depth	feet below TOC								N/A	N/A

SAMPLING EQUIPMENT *(Check equipment used)*

- ☐ Submersible Pump
- ☐ Peristaltic Pump
- ☐ Bailer
- ☐ Water Quality Meter

Make/Model: Horiba U-50

SAMPLED USING (CIRCLE) BAILER / SAMPLING PORT

TIME PURGE STARTED: 1530 10/5/2021 TIME PURGE COMPLETED: 1245 10/6/2021 TOTAL VOLUME ACTUALLY PURGED: 520 Gallons

SAMPLE COLLECTION CRITERIA *(check all that are appropriate)*

____ COLLECTED AFTER PARAMETERS STABILIZATION
____ COLLECTED AFTER 3 WELL VOLUMES PURGED
____ WELL DRY - COLLECTED AFTER 2 HOURS OF RECOVERY

SAMPLE TIME: 1245 10/6/2021

DEPTH TO WATER AT TIME OF SAMPLING: 93.04

General Notes (Including additional water level readings, purge rates, pump adjustments, etc. Use additional forms and log books as necessary.):

WELL INFORMATION:

Well Type (Screened or Open Borehole):

Top of Screened or Open Interval (ft below TOC):

Bottom of Screened or Open Interval (ft below TOC):

Pump Depth at Start of Purge (ft below TOC):_____

Pump Depth at End of Purge (ft below TOC):_____

Did the water level drop below the top of screen? (CIRCLE) YES / NO

LOGGED BY: SAMPLED BY: Q/A SAMPLE: Q/A SAMPLE TIME:

Procedural Notes:

* - Initial reading taken from first water produced during purge

Final three reading to be taken within 5 minutes of each other at the end of the purge time.

If a well pumps dry, it is to be allowed to recharge for two hours and then sampled.

Final reading should reflect information at time of sampling

All times with the pump turned off for transport of IDW to the plant should be recorded

IDW Transport to Plant Times and Estimated Volumes:

Well ID: GW-9004
Date: 10/5/2021 - 10/6/2021

Time Minutes from Start of Purge	Depth to Water Feet Below TOC	Purge Rate GPM	Pump Depth Feet Below TOC	Adjustments (changes in rate or pump depth; pauses due to IDW transport):
0	34.41	3.0	295	
5	39.21	1.5	295	
10	43.25	1.5	295	
15	59.23	1.5	295	
20	64.00	1.5	295	
25	69.37	1.5	295	
30	74.00	1.5	295	
40	78.94	1.5	295	
50	81.11	1.5	295	
55	87.64	1.5	295	
60	90.25	1.5	295	
60	30.40	1.5	295	
135	64.41	1.5	295	
140	64.53	1.5	295	
150	64.61	1.5	295	
165	64.68	1.5	295	
200	64.76	1.5	295	
235	64.79	1.5	295	
250	64.83	1.5	295	
275	64.91	1.5	295	

PROJECT NAME:	GE-LANCASTER	WELL DESIGNATION: RECOVERY WELL	GW-9006	DATE:	10/7/2021
PROJECT NO:	103P6888	SAMPLE DESIGNATION:	GW-9006	ANALYSES:	VOC's See Report

VOLUME OF WATER TO BE PURGED: {Formula: (1)-(2)=(3); (3)x(4)=(5); (5)x(6)=(7); (7)+(8)=(9)}

(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)
	-		=		X		=		X	3	=		÷		=	
Total Well Depth from TOC (feet)		Depth to water from TOC (feet)		Column of water (feet)		Volume Conversion from table (gal/ft)		Well Volume (gallons)		Number of volumes to purge		Total volume to purge (gallons)		Purge rate (gallons per minute [GPM])		Purge time (minutes)

VOLUME CONVERSION

Well Diameter_____

Casing Diameter	Gallons/Foot
1"	0.040
2"	0.163
4"	0.653
6"	1.469
8"	2.611
10"	4.080

FIELD PARAMETER	UNITS	INITIAL*	First	Second		10 min before FINAL	5 min before FINAL	FINAL	Stabilized (X)	Stabilization Range
Time	Military Time	1420								N/A
Total Purge Time	Minutes	0								N/A
Temp	°C	19.17								N/A
Cond	ms/cm	1.670								± 3%
DO	mg/L	3.10								± 10%
pH	standard units	7.69								± 0.1
ORP	mv	-17.0								± 10%
Turbidity	NTU	NM								± 10%
Salinity	%	NM								N/A
Description of	note color and	Clear & Colorless								N/A
Depth to Water	feet below TOC	272.32							N/A	N/A
Purge Rate	GPM								N/A	N/A
Pump Depth	feet below TOC								N/A	N/A

SAMPLING EQUIPMENT *(Check equipment used)*

- ☐ Submersible Pump
- ☐ Peristaltic Pump
- ☐ Bailer
- ☐ Water Quality Meter

Make/Model: Horiba U-50

SAMPLED USING (CIRCLE) SAMPLING PORT

TIME PURGE STARTED: TIME PURGE COMPLETED: TOTAL VOLUME ACTUALLY PURGED: Gallons

SAMPLE COLLECTION CRITERIA *(check all that are appropriate)*

____ COLLECTED AFTER PARAMETERS STABILIZATION
____ COLLECTED AFTER 3 WELL VOLUMES PURGED
____ WELL DRY - COLLECTED AFTER 2 HOURS OF RECOVERY

SAMPLE TIME: 1420

DEPTH TO WATER AT TIME OF SAMPLING: 272.32

General Notes (Including additional water level readings, purge rates, pump adjustments, etc. Use additional forms and log books as necessary.):

WELL INFORMATION:

Well Type (Screened or Open Borehole):

Top of Screened or Open Interval (ft below TOC):

Bottom of Screened or Open Interval (ft below TOC):

Pump Depth at Start of Purge (ft below TOC):_____

Pump Depth at End of Purge (ft below TOC):_____

Did the water level drop below the top of screen? (CIRCLE) YES / NO

LOGGED BY: JRD SAMPLED BY: JRD Q/A SAMPLE: NA Q/A SAMPLE TIME: NA

Procedural Notes:

* - Initial reading taken from first water produced during purge

Final three reading to be taken within 5 minutes of each other at the end of the purge time.

If a well pumps dry, it is to be allowed to recharge for two hours and then sampled.

Final reading should reflect information at time of sampling

All times with the pump turned off for transport of IDW to the plant should be recorded

IDW Transport to Plant Times and Estimated Volumes:

PROJECT NAME:	**GE-LANCASTER**	WELL DESIGNATION:	**GW-9007**	DATE:	**10/5/2021**
PROJECT NO:	**103P6888**	SAMPLE DESIGNATION:	**GW-9007**	ANALYSES:	**VOC's** **See Report**

VOLUME OF WATER TO BE PURGED: {Formula: (1)-(2)=(3); (3)x(4)=(5); (5)x(6)=(7); (7)+(8)=(9)}

(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)
347	-	**35.31**	=	**311.69**	X	**0.653**	=	**204**	X	**3**	=	**611**	÷	**6**	=	**102**
Total Well Depth from TOC (feet)		Depth to water from TOC (feet)		Column of water (feet)		Volume Conversion from table (gal/ft)		Well Volume (gallons)		Number of volumes to purge		Total volume to purge (gallons)		Purge rate (gallons per minute [GPM])		Purge time (minutes)

VOLUME CONVERSION

Well Diameter___4"___

Casing Diameter	Gallons/Foot
1"	0.040
2"	0.163
4"	0.653
6"	1.469
8"	2.611
10"	4.080

FIELD PARAMETER	UNITS	INITIAL*	First	Second		10 min before FINAL	5 min before FINAL	FINAL	Stabilized (X)	Stabilization Range
Time	Military Time	1210	1245	1320		1345	1350	1355		N/A
Total Purge Time	Minutes	0	35	70		95	100	105		N/A
Temp	°C	16.34	15.28	15.35		15.32	15.24	15.24		N/A
Cond	ms/cm	0.780	0.732	0.703		0.706	0.708	0.708		± 3%
DO	mg/L	3.63	6.65	10.99		10.19	10.48	10.52		± 10%
pH	standard units	7.28	7.04	7.10		7.11	7.12	7.09		± 0.1
ORP	mv	16.0	12.0	56.0		58.0	57.0	57.0		± 10%
Turbidity	NTU	NM	NM	NM		NM	NM	NM		± 10%
Salinity	%	NM	NM	NM		NM	NM	NM		N/A
Description of	note color and	Clear & Colorleaa	Clear & Colorleaa	Clear & Colorleaa		Clear & Colorleaa	Clear & Colorleaa	Clear & Colorleaa		N/A
Depth to Water	feet below TOC	36.35	36.6	36.61		36.62	36.62	36.62	N/A	N/A
Purge Rate	GPM	6	6	6		6	6	6	N/A	N/A
Pump Depth	feet below TOC	347	347	347		347	347	347	N/A	N/A

SAMPLING EQUIPMENT *(Check equipment used)*

- [X] Submersible Pump
- [ ] Peristaltic Pump
- [X] Bailer
- [X] Water Quality Meter

Make/Model: Horiba U-50

SAMPLED USING (CIRCLE) BAILER

TIME PURGE STARTED: 1210 TIME PURGE COMPLETED: 1355 TOTAL VOLUME ACTUALLY PURGED: 615 Gallons

SAMPLE COLLECTION CRITERIA *(check all that are appropriate)*

- ____ COLLECTED AFTER PARAMETERS STABILIZATION
- [X] COLLECTED AFTER 3 WELL VOLUMES PURGED
- ____ WELL DRY - COLLECTED AFTER 2 HOURS OF RECOVERY

SAMPLE TIME: 1400

DEPTH TO WATER AT TIME OF SAMPLING: 36.62

General Notes (Including additional water level readings, purge rates, pump adjustments, etc. Use additional forms and log books as necessary.):

WELL INFORMATION:

Well Type (Screened or Open Borehole): Screened

Top of Screened or Open Interval (ft below TOC): 332

Bottom of Screened or Open Interval (ft below TOC): 347

Pump Depth at Start of Purge (ft below TOC):_____347_____

Pump Depth at End of Purge (ft below TOC):____347_____

Did the water level drop below the top of screen? (CIRCLE) NO

LOGGED BY: JRD SAMPLED BY: JRD Q/A SAMPLE: NA Q/A SAMPLE TIME: NA

Procedural Notes:

* - Initial reading taken from first water produced during purge

Final three reading to be taken within 5 minutes of each other at the end of the purge time.

If a well pumps dry, it is to be allowed to recharge for two hours and then sampled.

Final reading should reflect information at time of sampling

All times with the pump turned off for transport of IDW to the plant should be recorded

IDW Transport to Plant Times and Estimated Volumes:

Purged Water to Ground

PROJECT NAME:	GE-LANCASTER	WELL DESIGNATION: RECOVERY WELL	GW-9008	DATE:	10/5/2021
PROJECT NO:	103P6888	SAMPLE DESIGNATION:	GW-9008	ANALYSES:	VOC's See Report

VOLUME OF WATER TO BE PURGED: {Formula: (1)-(2)=(3); (3)x(4)=(5); (5)x(6)=(7); (7)+(8)=(9)}

(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)
374	-	0	=	374	X	0.653	=	244	X	3	=	733	÷	6	=	122
Total Well Depth from TOC (feet)		Depth to water from TOC (feet)		Column of water (feet)		Volume Conversion from table (gal/ft)		Well Volume (gallons)		Number of volumes to purge		Total volume to purge (gallons)		Purge rate (gallons per minute [GPM])		Purge time (minutes)

VOLUME CONVERSION

Well Diameter_____

Casing Diameter	Gallons/Foot
1"	0.040
2"	0.163
4"	0.653
6"	1.469
8"	2.611
10"	4.080

FIELD PARAMETER	UNITS	INITIAL*	First	Second		10 min before FINAL	5 min before FINAL	FINAL	Stabilized (X)	Stabilization Range
Time	Military Time	1145	1205	1225		1310	1315	1320		N/A
Total Purge Time	Minutes	0	20	40		60	65	70		N/A
Temp	°C	19.95	14.51	14.23		14.42	14.45	14.50		N/A
Cond	ms/cm	0.499	0.783	0.770		0.77	0.77	0.773		± 3%
DO	mg/L	5.24	1.56	2.01		2.71	2.79	2.81		± 10%
pH	standard units	7.37	7.52	7.49		7.61	7.51	7.51		± 0.1
ORP	mv	-180.0	-210.0	-200.0		-200.0	-206.0	-206.0		± 10%
Turbidity	NTU	10.2	9.7	6.0		3.0	3.0	2.6		± 10%
Salinity	%	NM	NM	NM		NM	NM	NM		N/A
Description of	note color and	L. Brown	Clear & Colorless	Clear & Colorless		Clear & Colorless	Clear & Colorless	Clear & Colorless		N/A
Depth to Water	feet below TOC	1.40	8.04	123.84		128.00	128.05	128.11	N/A	N/A
Purge Rate	GPM	6	6	6		6	6	6	N/A	N/A
Pump Depth	feet below TOC	350	350	350		350	350	350	N/A	N/A

SAMPLING EQUIPMENT *(Check equipment used)*

- [X] Submersible Pump
- [ ] Peristaltic Pump
- [X] Bailer
- [X] Water Quality Meter

Make/Model: Horiba U-50

SAMPLED USING (CIRCLE) BAILER

TIME PURGE STARTED: 1110 TIME PURGE COMPLETED: 1320 TOTAL VOLUME ACTUALLY PURGED: 735 Gallons

SAMPLE COLLECTION CRITERIA *(check all that are appropriate)*

- ____ COLLECTED AFTER PARAMETERS STABILIZATION
- [X] COLLECTED AFTER 3 WELL VOLUMES PURGED
- ____ WELL DRY - COLLECTED AFTER 2 HOURS OF RECOVERY

SAMPLE TIME: 1330

DEPTH TO WATER AT TIME OF SAMPLING: 128.11

General Notes (Including additional water level readings, purge rates, pump adjustments, etc. Use additional forms and log books as necessary.):

WELL INFORMATION:

Well Type (Screened or Open Borehole): Screened

Top of Screened or Open Interval (ft below TOC): 299

Bottom of Screened or Open Interval (ft below TOC): 379

Pump Depth at Start of Purge (ft below TOC):_____350_____

Pump Depth at End of Purge (ft below TOC):_____350_____

Did the water level drop below the top of screen? (CIRCLE) NO

LOGGED BY: H. Martin SAMPLED BY: H. Martin Q/A SAMPLE: NA Q/A SAMPLE TIME: NA

Procedural Notes:

* - Initial reading taken from first water produced during purge

Final three reading to be taken within 5 minutes of each other at the end of the purge time.

If a well pumps dry, it is to be allowed to recharge for two hours and then sampled.

Final reading should reflect information at time of sampling

All times with the pump turned off for transport of IDW to the plant should be recorded

IDW Transport to Plant Times and Estimated Volumes:

Well ID: GW-9008
Date: 10/5/2021

Time Minutes from Start of Purge	Depth to Water Feet Below TOC	Purge Rate GPM	Pump Depth Feet Below TOC	Adjustments (changes in rate or pump depth; pauses due to IDW transport):
0	1.90	6.0	350	
20	121.40	6.0	350	Pause to transport IDW
20	8.07	6.0	350	Return for IDW Transport and continue pumping
40	123.84	6.0	350	Pause to transport IDW
40	12.02	6.0	350	Return for IDW Transport and continue pumping
70	127.72	6.0	350	
			350	250 GALLONS (750 TOTAL)

PROJECT NAME:	**GE-LANCASTER**	WELL DESIGNATION: **RECOVERY WELL**	**GW-9020**	DATE:	**10/7/2021**
PROJECT NO:	**103P6888**	SAMPLE DESIGNATION:	**GW-9020**	ANALYSES:	**VOC's/ Dissolved Metals See Report**

VOLUME OF WATER TO BE PURGED: {Formula: (1)-(2)=(3); (3)x(4)=(5); (5)x(6)=(7); (7)+(8)=(9)}

(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)
	-		=		X		=		X	3	=		÷		=	
Total Well Depth from TOC (feet)		Depth to water from TOC (feet)		Column of water (feet)		Volume Conversion from table (gal/ft)		Well Volume (gallons)		Number of volumes to purge		Total volume to purge (gallons)		Purge rate (gallons per minute [GPM])		Purge time (minutes)

VOLUME CONVERSION

Well Diameter_____

Casing Diameter	Gallons/Foot
1"	0.040
2"	0.163
4"	0.653
6"	1.469
8"	2.611
10"	4.080

FIELD PARAMETER	UNITS	INITIAL*	First	Second		10 min before FINAL	5 min before FINAL	FINAL	Stabilized (X)	Stabilization Range
Time	Military Time	1230								N/A
Total Purge Time	Minutes	--								N/A
Temp	°C	14.32								N/A
Cond	ms/cm	1.592								± 3%
DO	mg/L	0.98								± 10%
pH	standard units	7.19								± 0.1
ORP	mv	61.2								± 10%
Turbidity	NTU	NM								± 10%
Salinity	%	NM								N/A
Description of	note color and	Clear & Colorless								N/A
Depth to Water	feet below TOC	NM							N/A	N/A
Purge Rate	GPM								N/A	N/A
Pump Depth	feet below TOC								N/A	N/A

SAMPLING EQUIPMENT *(Check equipment used)*

- ☐ Submersible Pump
- ☐ Peristaltic Pump
- ☐ Bailer
- ☐ Water Quality Meter

Make/Model: Horiba U-50

SAMPLED USING (CIRCLE) BAILER / SAMPLING PORT

TIME PURGE STARTED: TIME PURGE COMPLETED: TOTAL VOLUME ACTUALLY PURGED: Gallons

SAMPLE COLLECTION CRITERIA *(check all that are appropriate)*

____ COLLECTED AFTER PARAMETERS STABILIZATION
____ COLLECTED AFTER 3 WELL VOLUMES PURGED
____ WELL DRY - COLLECTED AFTER 2 HOURS OF RECOVERY

SAMPLE TIME: 1230

DEPTH TO WATER AT TIME OF SAMPLING: NM

General Notes (Including additional water level readings, purge rates, pump adjustments, etc. Use additional forms and log books as necessary.):

WELL INFORMATION:

Well Type (Screened or Open Borehole):

Top of Screened or Open Interval (ft below TOC):

Bottom of Screened or Open Interval (ft below TOC):

Pump Depth at Start of Purge (ft below TOC):_____

Pump Depth at End of Purge (ft below TOC):_____

Did the water level drop below the top of screen? (CIRCLE) YES / NO

LOGGED BY: JRD SAMPLED BY: JRD Q/A SAMPLE: NA Q/A SAMPLE TIME: NA

Procedural Notes:

* - Initial reading taken from first water produced during purge

Final three reading to be taken within 5 minutes of each other at the end of the purge time.

If a well pumps dry, it is to be allowed to recharge for two hours and then sampled.

Final reading should reflect information at time of sampling

All times with the pump turned off for transport of IDW to the plant should be recorded

IDW Transport to Plant Times and Estimated Volumes:

PROJECT NAME:	**GE-LANCASTER**	WELL DESIGNATION:	**5**	DATE:	**10/6/2021**
PROJECT NO:	**103P6888**	SAMPLE DESIGNATION:	**5**	ANALYSES:	**VOC's/ Dissolved Metals** **See Report**

VOLUME OF WATER TO BE PURGED: {Formula: (1)-(2)=(3); (3)x(4)=(5); (5)x(6)=(7); (7)+(8)=(9)}

(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)
53	-	**17.67**	=	**35.33**	X	**4.08**	=	**144**	X	**3**	=	**432**	÷	**5**	=	**86.5**
Total Well Depth from TOC (feet)		Depth to water from TOC (feet)		Column of water (feet)		Volume Conversion from table (gal/ft)		Well Volume (gallons)		Number of volumes to purge		Total volume to purge (gallons)		Purge rate (gallons per minute [GPM])		Purge time (minutes)

VOLUME CONVERSION

Well Diameter__10____

Casing Diameter	Gallons/Foot
1"	0.040
2"	0.163
4"	0.653
6"	1.469
8"	2.611
10"	4.080

FIELD PARAMETER	UNITS	INITIAL*	First	Second		10 min before FINAL	5 min before FINAL	FINAL	Stabilized (X)	Stabilization Range
Time	Military Time	1020	1045	1140		1200	1205	1210		N/A
Total Purge Time	Minutes	0	25	45		65	70	75		N/A
Temp	°C	17.00	14.97	15.35		16.32	16.39	16.47		N/A
Cond	ms/cm	1.030	0.989	0.994		0.935	0.933	0.931		± 3%
DO	mg/L	3.21	5.10	3.49		5.29	5.24	5.30		± 10%
pH	standard units	6.88	6.87	6.86		6.85	6.85	6.85		± 0.1
ORP	mv	-197.0	-159.0	-156.0		-156.0	-155.0	-155.0		± 10%
Turbidity	NTU	3.9	6.6	1.1		1.1	1.2	1.0		± 10%
Salinity	%	NM	NM	NM						N/A
Description of	note color and	L. Brown	Clear & Colorless	Clear & Colorless		Clear & Colorless	Clear & Colorless	Clear & Colorless		N/A
Depth to Water	feet below TOC	17.67	19.42	25.42		25.60	25.59	25.60	N/A	N/A
Purge Rate	GPM	5	5	5		5	5	5	N/A	N/A
Pump Depth	feet below TOC	49	49	49		49	49	49	N/A	N/A

SAMPLING EQUIPMENT *(Check equipment used)*

- ☐ Submersible Pump
- ☐ Peristaltic Pump
- ☐ Bailer
- ☐ Water Quality Meter

Make/Model: Horiba U-50

SAMPLED USING (CIRCLE) BAILER / SAMPLING PORT

TIME PURGE STARTED: 1020 TIME PURGE COMPLETED: 1210 TOTAL VOLUME ACTUALLY PURGED: 450 Gallons

SAMPLE COLLECTION CRITERIA *(check all that are appropriate)*

- ____ COLLECTED AFTER PARAMETERS STABILIZATION
- ☒ COLLECTED AFTER 3 WELL VOLUMES PURGED
- ____ WELL DRY - COLLECTED AFTER 2 HOURS OF RECOVERY

SAMPLE TIME: 1215

DEPTH TO WATER AT TIME OF SAMPLING: 25.60

General Notes (Including additional water level readings, purge rates, pump adjustments, etc. Use additional forms and log books as necessary.):

WELL INFORMATION:

Well Type (Screened or Open Borehole):

Top of Screened or Open Interval (ft below TOC):

Bottom of Screened or Open Interval (ft below TOC):

Pump Depth at Start of Purge (ft below TOC):_____

Pump Depth at End of Purge (ft below TOC):_____

Did the water level drop below the top of screen? (CIRCLE) YES / NO

LOGGED BY: H. Martin SAMPLED BY: H. Martin Q/A SAMPLE: NA Q/A SAMPLE TIME: NA

Procedural Notes:

* - Initial reading taken from first water produced during purge

Final three reading to be taken within 5 minutes of each other at the end of the purge time.

If a well pumps dry, it is to be allowed to recharge for two hours and then sampled.

Final reading should reflect information at time of sampling

All times with the pump turned off for transport of IDW to the plant should be recorded

IDW Transport to Plant Times and Estimated Volumes:

1055-1130 - Transport 225 gallons to plant for disposal

Well ID: 5
Date: 10/6/2021

Time Minutes from Start of Purge	Depth to Water Feet Below TOC	Purge Rate GPM	Pump Depth Feet Below TOC	Adjustments (changes in rate or pump depth; pauses due to IDW transport):
0	17.67	5	30	
10	24.32	5	30	
25	19.42	5	30	
35	16.42	5	30	Pause to transport IDW
35	18.54	5	30	Return for IDW Transport and continue pumping
45	25.42	5	30	
55	25.61	5	30	
70	25.59	5	30	
75	25.60	5	30	

PROJECT NAME:	**GE-LANCASTER**	WELL DESIGNATION:	**6**	DATE:	**10/6/2021**
PROJECT NO:	**103P6888**	SAMPLE DESIGNATION:	**6**	ANALYSES:	**VOC's/ Dissolved Metals See Report**

VOLUME OF WATER TO BE PURGED: {Formula: (1)-(2)=(3); (3)x(4)=(5); (5)x(6)=(7); (7)+(8)=(9)}

(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)
50	-	**20.46**	=	**29.04**	X	**0.653**	=	**19**	X	**3**	=	**57**	÷	**1**	=	**57.0**
Total Well Depth from TOC (feet)		Depth to water from TOC (feet)		Column of water (feet)		Volume Conversion from table (gal/ft)		Well Volume (gallons)		Number of volumes to purge		Total volume to purge (gallons)		Purge rate (gallons per minute [GPM])		Purge time (minutes)

VOLUME CONVERSION

Well Diameter___4"___

Casing Diameter	Gallons/Foot
1"	0.040
2"	0.163
4"	0.653
6"	1.469
8"	2.611
10"	4.080

FIELD PARAMETER	UNITS	INITIAL*	First	Second		10 min before FINAL	5 min before FINAL	FINAL	Stabilized (X)	Stabilization Range
Time	Military Time	1250	1310	1330		1340	1345	1350		N/A
Total Purge Time	Minutes	0	20	40		50	55	60		N/A
Temp	°C	15.55	14.36	14.88		15.02	15.13	15.20		N/A
Cond	ms/cm	0.989	0.947	0.931		0.979	0.982	0.985		± 3%
DO	mg/L	2.49	2.79	2.93		1.87	1.90	1.87		± 10%
pH	standard units	7.14	7.10	7.07		7.02	7.01	7.01		± 0.1
ORP	mv	-80	-75	-60		-59	-60	-62		± 10%
Turbidity	NTU	55.7	5.1	0.8		0.8	0.8	0.7		± 10%
Salinity	%	NM	NM	NM		NM	NM	NM		N/A
Description of	note color and	L. Brown	Clear & Colorless	Clear & Colorless		Clear & Colorless	Clear & Colorless	Clear & Colorless		N/A
Depth to Water	feet below TOC	20.96	33.74	34.85		34.89	34.91	34.93	N/A	N/A
Purge Rate	GPM	1	1	1		1	1	1	N/A	N/A
Pump Depth	feet below TOC	47	47	47		47	47	47	N/A	N/A

SAMPLING EQUIPMENT *(Check equipment used)*

- [X] Submersible Pump
- [ ] Peristaltic Pump
- [X] Bailer
- [X] Water Quality Meter

Make/Model: Horiba U-50

SAMPLED USING (CIRCLE) BAILER

TIME PURGE STARTED: 1250 TIME PURGE COMPLETED: 1350 TOTAL VOLUME ACTUALLY PURGED: 60 Gallons

SAMPLE COLLECTION CRITERIA *(check all that are appropriate)*

- ____ COLLECTED AFTER PARAMETERS STABILIZATION
- [X] COLLECTED AFTER 3 WELL VOLUMES PURGED
- ____ WELL DRY - COLLECTED AFTER 2 HOURS OF RECOVERY

SAMPLE TIME: 1400

DEPTH TO WATER AT TIME OF SAMPLING: 34.93

General Notes (Including additional water level readings, purge rates, pump adjustments, etc. Use additional forms and log books as necessary):

WELL INFORMATION:

Well Type (Screened or Open Borehole): Screened

Top of Screened or Open Interval (ft below TOC): 30

Bottom of Screened or Open Interval (ft below TOC): 50

Pump Depth at Start of Purge (ft below TO 47

Pump Depth at End of Purge (ft below TOC):_____47_____

Did the water level drop below the top of screen? (CIRCLE) YES

LOGGED BY: H. Martin SAMPLED BY: H. Martin Q/A SAMPLE: NA Q/A SAMPLE TIME: NA

Procedural Notes:

* - Initial reading taken from first water produced during purge

Final three reading to be taken within 5 minutes of each other at the end of the purge time.

If a well pumps dry, it is to be allowed to recharge for two hours and then sampled.

Final reading should reflect information at time of sampling

All times with the pump turned off for transport of IDW to the plant should be recorded

IDW Transport to Plant Times and Estimated Volumes:

Purged water to ground

PROJECT NAME:	**GE-LANCASTER**	WELL DESIGNATION:	**7D**	DATE:	**10/6/2021 - 10/7/2021**
PROJECT NO:	**103P6888**	SAMPLE DESIGNATION:	**7D**	ANALYSES:	**VOC's/ Dissolved Metals** **See Report**

VOLUME OF WATER TO BE PURGED: {Formula: (1)-(2)=(3); (3)x(4)=(5); (5)x(6)=(7); (7)+(8)=(9)}

(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)
110	-	**18.5**	=	**91.5**	X	**1.469**	=	**134**	X	**3**	=	**403**	÷	**3**	=	**134**
Total Well Depth from TOC (feet)		Depth to water from TOC (feet)		Column of water (feet)		Volume Conversion from table (gal/ft)		Well Volume (gallons)		Number of volumes to purge		Total volume to purge (gallons)		Purge rate (gallons per minute [GPM])		Purge time (minutes)

VOLUME CONVERSION

Well Diameter__6"____

Casing Diameter	Gallons/Foot
1"	0.040
2"	0.163
4"	0.653
6"	1.469
8"	2.611
10"	4.080

FIELD PARAMETER	UNITS	INITIAL*	First	10/7/2021 Second		10 min before FINAL	5 min before FINAL	FINAL	Stabilized (X)	Stabilization Range
Time	Military Time	1445	1530	0950		1025	1030	1035		N/A
Total Purge Time	Minutes	0	45	90		125	130	135		N/A
Temp	°C	15.51	15.00	14.75		15.00	15.17	15.35		N/A
Cond	ms/cm	1.260	1.790	1.840		1.81	1.80	1.800		± 3%
DO	mg/L	0.75	1.63	1.32		1.70	1.70	1.70		± 10%
pH	standard units	8.34	7.42	7.65		7.40	7.40	7.38		± 0.1
ORP	mv	-3.0	-12.9	-14.6		-134.0	-139.0	-137.0		± 10%
Turbidity	NTU	72.2	4.4	5.4		0.0	0.0	0.0		± 10%
Salinity	%	NM	NM	NM		NM	NM	NM		N/A
Description of	note color and	Black	Clear & Colorless	Clear & Colorless		Clear & Colorless	Clear & Colorless	Clear & Colorless		N/A
Depth to Water	feet below TOC	18.50	19.03	19.49		19.60	19.60	19.59	N/A	N/A
Purge Rate	GPM	3	3	3		3	3	3	N/A	N/A
Pump Depth	feet below TOC	90	90	90		90	90	90	N/A	N/A

SAMPLING EQUIPMENT *(Check equipment used)*

- [X] Submersible Pump
- [ ] Peristaltic Pump
- [X] Bailer
- [X] Water Quality Meter

Make/Model: Horiba U-50

SAMPLED USING (CIRCLE) BAILER

TIME PURGE STARTED: 1445 (10/6/2021) TIME PURGE COMPLETED: 1035 (10/7/2021) TOTAL VOLUME ACTUALLY PURGED: 405 Gallons

SAMPLE COLLECTION CRITERIA *(check all that are appropriate)*

- ____ COLLECTED AFTER PARAMETERS STABILIZATION
- [X] COLLECTED AFTER 3 WELL VOLUMES PURGED
- ____ WELL DRY - COLLECTED AFTER 2 HOURS OF RECOVERY

SAMPLE TIME: 1040

DEPTH TO WATER AT TIME OF SAMPLING: 19.59

General Notes (Including additional water level readings, purge rates, pump adjustments, etc. Use additional forms and log books as necessary.):

10/6/2021

1600 - Generator Issues. Will have to restart on 10/7/2021

10/7/2021

0935 - Generator Issue repaired - resume sampling

WELL INFORMATION:

Well Type (Screened or Open Borehole): Open Borehole

Top of Screened or Open Interval (ft below TOC): 80

Bottom of Screened or Open Interval (ft below TOC): 110

Pump Depth at Start of Purge (ft below TOC):_____90_____

Pump Depth at End of Purge (ft below TOC):_____90_____

Did the water level drop below the top of screen? (CIRCLE) NO

LOGGED BY: H. Martin SAMPLED BY: H. Martin Q/A SAMPLE: NA Q/A SAMPLE TIME: NA

Procedural Notes:

* - Initial reading taken from first water produced during purge

Final three reading to be taken within 5 minutes of each other at the end of the purge time.

If a well pumps dry, it is to be allowed to recharge for two hours and then sampled.

Final reading should reflect information at time of sampling

All times with the pump turned off for transport of IDW to the plant should be recorded

IDW Transport to Plant Times and Estimated Volumes:

Purged water to ground

PROJECT NAME:	**GE-LANCASTER**	WELL DESIGNATION:	**10D**	DATE:	**10/7/2021**
PROJECT NO:	**103P6888**	SAMPLE DESIGNATION:	**10D**	ANALYSES:	**VOC's** **See Report**

VOLUME OF WATER TO BE PURGED: {Formula: (1)-(2)=(3); (3)x(4)=(5); (5)x(6)=(7); (7)+(8)=(9)}

(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)
48	-	**15.71**	=	**32.29**	X	**0.653**	=	**21**	X	**3**	=	**63**	÷	**1**	=	**63.3**
Total Well Depth from TOC (feet)		Depth to water from TOC (feet)		Column of water (feet)		Volume Conversion from table (gal/ft)		Well Volume (gallons)		Number of volumes to purge		Total volume to purge (gallons)		Purge rate (gallons per minute [GPM])		Purge time (minutes)

VOLUME CONVERSION

Well Diameter___4"___

Casing Diameter	Gallons/Foot
1"	0.040
2"	0.163
4"	0.653
6"	1.469
8"	2.611
10"	4.080

FIELD PARAMETER	UNITS	INITIAL*	First	Second		10 min before FINAL	5 min before FINAL	FINAL	Stabilized (X)	Stabilization Range
Time	Military Time	1100	1120	1140		1155	1200	1205		N/A
Total Purge Time	Minutes	0	20	40		55	60	65		N/A
Temp	°C	15.39	14.15	14.25		16.27	16.29	16.29		N/A
Cond	ms/cm	0.929	0.938	0.960		0.95	0.95	0.949		± 3%
DO	mg/L	5.73	6.01	7.65		0.72	0.71	0.65		± 10%
pH	standard units	7.37	7.22	7.11		7.07	7.08	7.07		± 0.1
ORP	mv	-174.0	-168.0	-158.0		-147.0	142.0	-138.0		± 10%
Turbidity	NTU	3.9	0.8	0.2		0.1	0.2	0.3		± 10%
Salinity	%	NM	NM	NM		NM	NM	NM		N/A
Description of	note color and	L. Gray	Clear & Colorless	Clear & Colorless		Clear & Colorless	Clear & Colorless	Clear & Colorless		N/A
Depth to Water	feet below TOC	15.71	31.61	36.49		37.52	37.55	37.59	N/A	N/A
Purge Rate	GPM	1	1	1		1	1	1	N/A	N/A
Pump Depth	feet below TOC	47	47	47		47	47	47	N/A	N/A

SAMPLING EQUIPMENT *(Check equipment used)*

- [X] Submersible Pump
- [ ] Peristaltic Pump
- [X] Bailer
- [X] Water Quality Meter

Make/Model: Horiba U-50

SAMPLED USING (CIRCLE) BAILER

TIME PURGE STARTED: 1100 TIME PURGE COMPLETED: 1205 TOTAL VOLUME ACTUALLY PURGED: 65 Gallons

SAMPLE COLLECTION CRITERIA *(check all that are appropriate)*

- ____ COLLECTED AFTER PARAMETERS STABILIZATION
- [X] COLLECTED AFTER 3 WELL VOLUMES PURGED
- ____ WELL DRY - COLLECTED AFTER 2 HOURS OF RECOVERY

SAMPLE TIME: 1210

DEPTH TO WATER AT TIME OF SAMPLING: 37.57

General Notes (Including additional water level readings, purge rates, pump adjustments, etc. Use additional forms and log books as necessary.):

1120 - Generator turned-off

1121 - Generator Restarted

WELL INFORMATION:

Well Type (Screened or Open Borehole): Screened

Top of Screened or Open Interval (ft below TOC): 38

Bottom of Screened or Open Interval (ft below TOC): 48

Pump Depth at Start of Purge (ft below TOC):_____47_____

Pump Depth at End of Purge (ft below TOC):_____47_____

Did the water level drop below the top of screen? (CIRCLE) NO

LOGGED BY: H. Martin SAMPLED BY: H. Martin Q/A SAMPLE: NA Q/A SAMPLE TIME: NA

Procedural Notes:

* - Initial reading taken from first water produced during purge

Final three reading to be taken within 5 minutes of each other at the end of the purge time.

If a well pumps dry, it is to be allowed to recharge for two hours and then sampled.

Final reading should reflect information at time of sampling

All times with the pump turned off for transport of IDW to the plant should be recorded

IDW Transport to Plant Times and Estimated Volumes:

Purged Water to ground

Well ID: 10D
Date: 10/9/2021

Time Minutes from Start of Purge	Depth to Water Feet Below TOC	Purge Rate GPM	Pump Depth Feet Below TOC	Adjustments (changes in rate or pump depth; pauses due to IDW transport):
0	15.71	1.0	47	
20	31.61	1.0	47	
35	35.78	1.0	47	
40	36.49	1.0	47	
55	37.42	1.0	47	
65	37.57	1.0	47	

PROJECT NAME:	**GE-LANCASTER**	WELL DESIGNATION:	**11S**	DATE:	**10/7/2021**
PROJECT NO:	**103P6888**	SAMPLE DESIGNATION:	**11S**	ANALYSES:	**VOC's** **See Report**

VOLUME OF WATER TO BE PURGED: {Formula: (1)-(2)=(3); (3)x(4)=(5); (5)x(6)=(7); (7)+(8)=(9)}

(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)
160	-	**82.1**	=	**78**	X	**1.469**	=	**115**	X	**3**	=	**344**	÷	**3**	=	**115**
Total Well Depth from TOC (feet)		Depth to water from TOC (feet)		Column of water (feet)		Volume Conversion from table (gal/ft)		Well Volume (gallons)		Number of volumes to purge		Total volume to purge (gallons)		Purge rate (gallons per minute [GPM])		Purge time (minutes)

VOLUME CONVERSION

Well Diameter__6:"____

Casing Diameter	Gallons/Foot
1"	0.040
2"	0.163
4"	0.653
6"	1.469
8"	2.611
10"	4.080

FIELD PARAMETER	UNITS	INITIAL*	First	Second		10 min before FINAL	5 min before FINAL	FINAL	Stabilized (X)	Stabilization Range
Time	Military Time	1300								N/A
Total Purge Time	Minutes	0								N/A
Temp	°C	16.74								N/A
Cond	ms/cm	0.793								± 3%
DO	mg/L	1.32								± 10%
pH	standard units	8.20								± 0.1
ORP	mv	-220.0								± 10%
Turbidity	NTU	NM								± 10%
Salinity	%	NM								N/A
Description of	note color and	Black								N/A
Depth to Water	feet below TOC	82.10							N/A	N/A
Purge Rate	GPM	3							N/A	N/A
Pump Depth	feet below TOC	160							N/A	N/A

SAMPLING EQUIPMENT *(Check equipment used)*

- ☐ Submersible Pump
- ☐ Peristaltic Pump
- ☐ Bailer
- ☐ Water Quality Meter

Make/Model: Horiba U-50

SAMPLED USING (CIRCLE) BAILER / SAMPLING PORT

TIME PURGE STARTED: TIME PURGE COMPLETED: TOTAL VOLUME ACTUALLY PURGED: Gallons

SAMPLE COLLECTION CRITERIA *(check all that are appropriate)*

- ____ COLLECTED AFTER PARAMETERS STABILIZATION
- ____ COLLECTED AFTER 3 WELL VOLUMES PURGED
- ☒ WELL DRY - NO RECHARGE

SAMPLE TIME: NA

DEPTH TO WATER AT TIME OF SAMPLING: NA

General Notes (Including additional water level readings, purge rates, pump adjustments, etc. Use additional forms and log books as necessary.):

1315 - Well runs dry while sampling. Total of approximtly 40 gallons have been purged from well.

1600 - No recharge in well - not able to collect sample at this location.

WELL INFORMATION:

Well Type (Screened or Open Borehole): Open Borehole

Top of Screened or Open Interval (ft below TOC): 95

Bottom of Screened or Open Interval (ft below TOC): 160

Pump Depth at Start of Purge (ft below TOC):___160_____

Pump Depth at End of Purge (ft below TOC):_____160_____

Did the water level drop below the top of screen? (CIRCLE) YES / NO

LOGGED BY: JRD SAMPLED BY: JRD Q/A SAMPLE: NA Q/A SAMPLE TIME: NA

Procedural Notes:

* - Initial reading taken from first water produced during purge

Final three reading to be taken within 5 minutes of each other at the end of the purge time.

If a well pumps dry, it is to be allowed to recharge for two hours and then sampled.

Final reading should reflect information at time of sampling

All times with the pump turned off for transport of IDW to the plant should be recorded

IDW Transport to Plant Times and Estimated Volumes:

1320 - Transport 40 gallons to plant for disposal

PROJECT NAME:	**GE-LANCASTER**	WELL DESIGNATION:	**12D**	DATE:	**10/7/2021**
PROJECT NO:	**103P6888**	SAMPLE DESIGNATION:	**12D**	ANALYSES:	**VOC's** **See Report**

VOLUME OF WATER TO BE PURGED: {Formula: (1)-(2)=(3); (3)x(4)=(5); (5)x(6)=(7); (7)+(8)=(9)}

(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)
200	-	**0.7**	=	**199**	X	**1.469**	=	**292**	X	**3**	=	**877**	÷	**7**	=	**125.0**
Total Well Depth from TOC (feet)		Depth to water from TOC (feet)		Column of water (feet)		Volume Conversion from table (gal/ft)		Well Volume (gallons)		Number of volumes to purge		Total volume to purge (gallons)		Purge rate (gallons per minute [GPM])		Purge time (minutes)

VOLUME CONVERSION

Well Diameter_____

Casing Diameter	Gallons/Foot
1"	0.040
2"	0.163
4"	0.653
6"	1.469
8"	2.611
10"	4.080

FIELD PARAMETER	UNITS	INITIAL*	First	Second		10 min before FINAL	5 min before FINAL	FINAL	Stabilized (X)	Stabilization Range
Time	Military Time	1235	1315	1355		1430	1435	1440		N/A
Total Purge Time	Minutes	0	40	80		115	120	125		N/A
Temp	°C	15.75	15.44	15.52		15.56	15.57	15.59		N/A
Cond	ms/cm	0.758	0.805	0.801		0.80	0.80	0.803		± 3%
DO	mg/L	1.66	1.65	0.53		0.00	0.00	0.00		± 10%
pH	standard units	7.98	7.96	7.56		7.53	7.52	7.52		± 0.1
ORP	mv	-179.0	-179.0	-159.0		-140.0	-138.0	-133.0		± 10%
Turbidity	NTU	93.0	93.0	56.7		34.6	32.1	28.6		± 10%
Salinity	%	NM	NM	NM		NM	NM	NM		N/A
Description of	note color and	L. Brown	L. Brown	L. Brown		L. Brown	L. Brown	L. Brown		N/A
Depth to Water	feet below TOC	0.7	32.33	31.14		31.16	31.16	31.16	N/A	N/A
Purge Rate	GPM	7	7	7		7	7	7	N/A	N/A
Pump Depth	feet below TOC								N/A	N/A

SAMPLING EQUIPMENT *(Check equipment used)*

- [X] Submersible Pump
- [ ] Peristaltic Pump
- [X] Bailer
- [X] Water Quality Meter

Make/Model: Horiba U-50

SAMPLED USING (CIRCLE) BAILER

TIME PURGE STARTED: 1235 TIME PURGE COMPLETED: 1440 TOTAL VOLUME ACTUALLY PURGED: 878 Gallons

SAMPLE COLLECTION CRITERIA *(check all that are appropriate)*

- ____ COLLECTED AFTER PARAMETERS STABILIZATION
- [X] COLLECTED AFTER 3 WELL VOLUMES PURGED
- ____ WELL DRY - COLLECTED AFTER 2 HOURS OF RECOVERY

SAMPLE TIME: 1445

DEPTH TO WATER AT TIME OF SAMPLING: 31.16

General Notes (Including additional water level readings, purge rates, pump adjustments, etc. Use additional forms and log books as necessary.):

WELL INFORMATION:

Well Type (Screened or Open Borehole): Open Borehole

Top of Screened or Open Interval (ft below TOC): 139

Bottom of Screened or Open Interval (ft below TOC): 200

Pump Depth at Start of Purge (ft below TOC):____200_____

Pump Depth at End of Purge (ft below TOC):_____200_____

Did the water level drop below the top of screen? (CIRCLE) NO

LOGGED BY: H. Martin SAMPLED BY: H. Martin Q/A SAMPLE: NA Q/A SAMPLE TIME: NA

Procedural Notes:

* - Initial reading taken from first water produced during purge

Final three reading to be taken within 5 minutes of each other at the end of the purge time.

If a well pumps dry, it is to be allowed to recharge for two hours and then sampled.

Final reading should reflect information at time of sampling

All times with the pump turned off for transport of IDW to the plant should be recorded

IDW Transport to Plant Times and Estimated Volumes:

Purged Water to Ground

PROJECT NAME:	GE-LANCASTER	WELL DESIGNATION: RECOVERY WELL	14	DATE:	10/7/2021
PROJECT NO:	103P6888	SAMPLE DESIGNATION:	14	ANALYSES:	VOC's/ Dissolved Metals See Report

VOLUME OF WATER TO BE PURGED: {Formula: (1)-(2)=(3); (3)x(4)=(5); (5)x(6)=(7); (7)+(8)=(9)}

(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)
	-		=		X		=		X	3	=		÷		=	
Total Well Depth from TOC (feet)		Depth to water from TOC (feet)		Column of water (feet)		Volume Conversion from table (gal/ft)		Well Volume (gallons)		Number of volumes to purge		Total volume to purge (gallons)		Purge rate (gallons per minute [GPM])		Purge time (minutes)

VOLUME CONVERSION

Well Diameter_____

Casing Diameter	Gallons/Foot
1"	0.040
2"	0.163
4"	0.653
6"	1.469
8"	2.611
10"	4.080

FIELD PARAMETER	UNITS	INITIAL*	First	Second		10 min before FINAL	5 min before FINAL	FINAL	Stabilized (X)	Stabilization Range
Time	Military Time	1500								N/A
Total Purge Time	Minutes	0								N/A
Temp	°C	17.03								N/A
Cond	ms/cm	1.200								± 3%
DO	mg/L	3.10								± 10%
pH	standard units	7.79								± 0.1
ORP	mv	-77.0								± 10%
Turbidity	NTU	NM								± 10%
Salinity	%	NM								N/A
Description of	note color and	Clear & Colorless								N/A
Depth to Water	feet below TOC	158.00							N/A	N/A
Purge Rate	GPM								N/A	N/A
Pump Depth	feet below TOC								N/A	N/A

SAMPLING EQUIPMENT *(Check equipment used)*

- [x] Submersible Pump
- [ ] Peristaltic Pump
- [ ] Bailer
- [x] Water Quality Meter

Make/Model: Horiba U-50

SAMPLED USING (CIRCLE) SAMPLING PORT

TIME PURGE STARTED: TIME PURGE COMPLETED: TOTAL VOLUME ACTUALLY PURGED: Gallons

SAMPLE COLLECTION CRITERIA *(check all that are appropriate)*

____ COLLECTED AFTER PARAMETERS STABILIZATION
____ COLLECTED AFTER 3 WELL VOLUMES PURGED
____ WELL DRY - COLLECTED AFTER 2 HOURS OF RECOVERY

SAMPLE TIME: 1500

DEPTH TO WATER AT TIME OF SAMPLING: 158

General Notes (Including additional water level readings, purge rates, pump adjustments, etc. Use additional forms and log books as necessary.):

WELL INFORMATION:

Well Type (Screened or Open Borehole):

Top of Screened or Open Interval (ft below TOC):

Bottom of Screened or Open Interval (ft below TOC):

Pump Depth at Start of Purge (ft below TOC):_____

Pump Depth at End of Purge (ft below TOC):_____

Did the water level drop below the top of screen? (CIRCLE) YES / NO

LOGGED BY: JRD SAMPLED BY: JRD Q/A SAMPLE: NA Q/A SAMPLE TIME: NA

Procedural Notes:

* - Initial reading taken from first water produced during purge

Final three reading to be taken within 5 minutes of each other at the end of the purge time.

If a well pumps dry, it is to be allowed to recharge for two hours and then sampled.

Final reading should reflect information at time of sampling

All times with the pump turned off for transport of IDW to the plant should be recorded

IDW Transport to Plant Times and Estimated Volumes:

PROJECT NAME:	**GE-LANCASTER**	WELL DESIGNATION:	**15**	DATE:	**10/7/2021**
PROJECT NO:	**103P6888**	SAMPLE DESIGNATION:	**15**	ANALYSES:	**VOC's & Metals** **See Report**

VOLUME OF WATER TO BE PURGED: {Formula: (1)-(2)=(3); (3)x(4)=(5); (5)x(6)=(7); (7)+(8)=(9)}

(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)
34	-	**11.51**	=	**22.49**	X	**1.469**	=	**33**	X	**3**	=	**99**	÷	**3**	=	**33.0**
Total Well Depth from TOC (feet)		Depth to water from TOC (feet)		Column of water (feet)		Volume Conversion from table (gal/ft)		Well Volume (gallons)		Number of volumes to purge		Total volume to purge (gallons)		Purge rate (gallons per minute [GPM])		Purge time (minutes)

VOLUME CONVERSION

Well Diameter___6"___

Casing Diameter	Gallons/Foot
1"	0.040
2"	0.163
4"	0.653
6"	1.469
8"	2.611
10"	4.080

FIELD PARAMETER	UNITS	INITIAL*	First	Second		10 min before FINAL	5 min before FINAL	FINAL	Stabilized (X)	Stabilization Range
Time	Military Time	1500	1510	1520		1525	1530	1535		N/A
Total Purge Time	Minutes	0	10	20		25	30	35		N/A
Temp	°C	15.18	14.12	16.03		13.97	13.92	13.90		N/A
Cond	ms/cm	1.180	1.240	1.270		1.27	1.27	1.270		± 3%
DO	mg/L	1.30	1.58	0.38		0.42	0.49	0.51		± 10%
pH	standard units	7.54	7.58	7.01		7.60	7.60	7.59		± 0.1
ORP	mv	-238.0	-239.0	-238.0		-238.0	-238.0	-237.0		± 10%
Turbidity	NTU	124.0	37.1	2.6		2.9	3.0	3.1		± 10%
Salinity	%	NM	NM	NM		NM	NM	NM		N/A
Description of	note color and	L. Brown	Clear & Colorless	Clear & Colorless		Clear & Colorless	Clear & Colorless	Clear & Colorless		N/A
Depth to Water	feet below TOC	11.81	11.59	11.59		11.59	11.59	11.59	N/A	N/A
Purge Rate	GPM	3	3	3		3	3	3	N/A	N/A
Pump Depth	feet below TOC	30	30	30		30	30	30	N/A	N/A

SAMPLING EQUIPMENT *(Check equipment used)*

- ☒ Submersible Pump
- ☐ Peristaltic Pump
- ☒ Bailer
- ☒ Water Quality Meter

Make/Model: Horiba U-50

SAMPLED USING (CIRCLE): Bailer

TIME PURGE STARTED: TIME PURGE COMPLETED: TOTAL VOLUME ACTUALLY PURGED: Gallons

SAMPLE COLLECTION CRITERIA *(check all that are appropriate)*

- ____ COLLECTED AFTER PARAMETERS STABILIZATION
- ☒ COLLECTED AFTER 3 WELL VOLUMES PURGED
- ____ WELL DRY - COLLECTED AFTER 2 HOURS OF RECOVERY

SAMPLE TIME: 1535

DEPTH TO WATER AT TIME OF SAMPLING: 11.59

General Notes (Including additional water level readings, purge rates, pump adjustments, etc. Use additional forms and log books as necessary.):

WELL INFORMATION:

Well Type (Screened or Open Borehole): Screened

Top of Screened or Open Interval (ft below TOC): 17

Bottom of Screened or Open Interval (ft below TOC): 27

Pump Depth at Start of Purge (ft below TOC):_____30_____

Pump Depth at End of Purge (ft below TOC):_____30_____

Did the water level drop below the top of screen? (CIRCLE) NO

LOGGED BY: H. Martin SAMPLED BY: H. Martin Q/A SAMPLE: NA Q/A SAMPLE TIME: NA

Procedural Notes:

* - Initial reading taken from first water produced during purge

Final three reading to be taken within 5 minutes of each other at the end of the purge time.

If a well pumps dry, it is to be allowed to recharge for two hours and then sampled.

Final reading should reflect information at time of sampling

All times with the pump turned off for transport of IDW to the plant should be recorded

IDW Transport to Plant Times and Estimated Volumes:

PROJECT NAME:	GE-LANCASTER	WELL DESIGNATION: RECOVERY WELL	18	DATE:	10/7/2021
PROJECT NO:	103P6888	SAMPLE DESIGNATION:	18	ANALYSES:	VOC's See Report

VOLUME OF WATER TO BE PURGED: {Formula: (1)-(2)=(3); (3)x(4)=(5); (5)x(6)=(7); (7)+(8)=(9)}

(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)
	-		=		X		=		X	3	=		÷		=	
Total Well Depth from TOC (feet)		Depth to water from TOC (feet)		Column of water (feet)		Volume Conversion from table (gal/ft)		Well Volume (gallons)		Number of volumes to purge		Total volume to purge (gallons)		Purge rate (gallons per minute [GPM])		Purge time (minutes)

VOLUME CONVERSION

Well Diameter_____

Casing Diameter	Gallons/Foot
1"	0.040
2"	0.163
4"	0.653
6"	1.469
8"	2.611
10"	4.080

FIELD PARAMETER	UNITS	INITIAL*	First	Second		10 min before FINAL	5 min before FINAL	FINAL	Stabilized (X)	Stabilization Range
Time	Military Time	1410								N/A
Total Purge Time	Minutes	0								N/A
Temp	°C	17.40								N/A
Cond	ms/cm	1.350								± 3%
DO	mg/L	5.77								± 10%
pH	standard units	7.76								± 0.1
ORP	mv	7.0								± 10%
Turbidity	NTU	NM								± 10%
Salinity	%	NM								N/A
Description of	note color and	Clear & Colorless								N/A
Depth to Water	feet below TOC	NA							N/A	N/A
Purge Rate	GPM								N/A	N/A
Pump Depth	feet below TOC								N/A	N/A

SAMPLING EQUIPMENT *(Check equipment used)*

- ☐ Submersible Pump
- ☐ Peristaltic Pump
- ☒ Bailer
- ☒ Water Quality Meter

Make/Model: Horiba U-50

SAMPLED USING (CIRCLE) SAMPLING PORT

TIME PURGE STARTED: TIME PURGE COMPLETED: TOTAL VOLUME ACTUALLY PURGED: Gallons

SAMPLE COLLECTION CRITERIA *(check all that are appropriate)*

____ COLLECTED AFTER PARAMETERS STABILIZATION
____ COLLECTED AFTER 3 WELL VOLUMES PURGED
____ WELL DRY - COLLECTED AFTER 2 HOURS OF RECOVERY

SAMPLE TIME: 1410

DEPTH TO WATER AT TIME OF SAMPLING: NA

General Notes (Including additional water level readings, purge rates, pump adjustments, etc. Use additional forms and log books as necessary.):

WELL INFORMATION:

Well Type (Screened or Open Borehole):

Top of Screened or Open Interval (ft below TOC):

Bottom of Screened or Open Interval (ft below TOC):

Pump Depth at Start of Purge (ft below TOC):_____

Pump Depth at End of Purge (ft below TOC):_____

Did the water level drop below the top of screen? (CIRCLE) YES / NO

LOGGED BY: JRD SAMPLED BY: JRD Q/A SAMPLE: NA Q/A SAMPLE TIME: NA

Procedural Notes:

* - Initial reading taken from first water produced during purge

Final three reading to be taken within 5 minutes of each other at the end of the purge time.

If a well pumps dry, it is to be allowed to recharge for two hours and then sampled.

Final reading should reflect information at time of sampling

All times with the pump turned off for transport of IDW to the plant should be recorded

IDW Transport to Plant Times and Estimated Volumes:

PROJECT NAME:	GE-LANCASTER	WELL DESIGNATION:	AW-3	DATE:	10/6/2021
PROJECT NO:	103P6888	SAMPLE DESIGNATION:	AW-3	ANALYSES:	VOC's Only See Report

VOLUME OF WATER TO BE PURGED: {Formula: (1)-(2)=(3); (3)x(4)=(5); (5)x(6)=(7); (7)+(8)=(9)}

(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)
150	-	14.8	=	136	X	1.469	=	200	X	3	=	599	÷	6	=	100
Total Well Depth from TOC (feet)		Depth to water from TOC (feet)		Column of water (feet)		Volume Conversion from table (gal/ft)		Well Volume (gallons)		Number of volumes to purge		Total volume to purge (gallons)		Purge rate (gallons per minute [GPM])		Purge time (minutes)

VOLUME CONVERSION

Well Diameter 6"

Casing Diameter	Gallons/Foot
1"	0.040
2"	0.163
4"	0.653
6"	1.469
8"	2.611
10"	4.080

FIELD PARAMETER	UNITS	INITIAL*	First	Second		10 min before FINAL	5 min before FINAL	FINAL	Stabilized (X)	Stabilization Range
Time	Military Time	1315	1345	1415		1440	1445	1450		N/A
Total Purge Time	Minutes	0	30	60		90	95	100		N/A
Temp	°C	17.79	18.58	19.08		18.82	18.53	18.49		N/A
Cond	ms/cm	1.820	1.490	1.440		1.470	1.480	1.490		± 3%
DO	mg/L	2.67	0.40	3.59		2.23	2.25	2.26		± 10%
pH	standard units	7.44	7.55	7.47		7.45	7.44	7.44		± 0.1
ORP	mv	-242.0	-255.0	-230.0		-243.0	-263.0	-277.0		± 10%
Turbidity	NTU	NM	NM	NM		NM	NM	NM		± 10%
Salinity	%	NM	NM	NM		NM	NM	NM		N/A
Description of	note color and	L. Brown	Clear	Clear		Clear	Clear	Clear		N/A
Depth to Water	feet below TOC	14.80	64.93	72.71		124.28	124.29	124.29	N/A	N/A
Purge Rate	GPM	6	6	6		1	1	1	N/A	N/A
Pump Depth	feet below TOC								N/A	N/A

SAMPLING EQUIPMENT *(Check equipment used)*

- [X] Submersible Pump
- [ ] Peristaltic Pump
- [X] Bailer
- [X] Water Quality Meter

Make/Model: Horiba U-50

SAMPLED USING (CIRCLE) BAILER

TIME PURGE STARTED: 1315 TIME PURGE COMPLETED: 1450 TOTAL VOLUME ACTUALLY PURGED: 600 Gallons

SAMPLE COLLECTION CRITERIA *(check all that are appropriate)*

- ____ COLLECTED AFTER PARAMETERS STABILIZATION
- [X] COLLECTED AFTER 3 WELL VOLUMES PURGED
- ____ WELL DRY - COLLECTED AFTER 2 HOURS OF RECOVERY

SAMPLE TIME: 1500

DEPTH TO WATER AT TIME OF SAMPLING: 124.29

General Notes (Including additional water level readings, purge rates, pump adjustments, etc. Use additional forms and log books as necessary.):

WELL INFORMATION:

Well Type (Screened or Open Borehole): Open Borehole

Top of Screened or Open Interval (ft below TOC): 120

Bottom of Screened or Open Interval (ft below TOC): 150

Pump Depth at Start of Purge (ft below TOC):_____

Pump Depth at End of Purge (ft below TOC):_____

Did the water level drop below the top of screen? (CIRCLE) YES

LOGGED BY: JRD SAMPLED BY: JRD Q/A SAMPLE: NA Q/A SAMPLE TIME: NA

Procedural Notes:

* - Initial reading taken from first water produced during purge

Final three reading to be taken within 5 minutes of each other at the end of the purge time.

If a well pumps dry, it is to be allowed to recharge for two hours and then sampled.

Final reading should reflect information at time of sampling

All times with the pump turned off for transport of IDW to the plant should be recorded

IDW Transport to Plant Times and Estimated Volumes:

Purged Water to Ground

PROJECT NAME:	**GE-LANCASTER**	WELL DESIGNATION:	**AW-4**	DATE:	**10/6/2021 - 10/7/2021**
PROJECT NO:	**103P6888**	SAMPLE DESIGNATION:	**AW-4**	ANALYSES:	**VOC's/ Dissolved Metals** **See Report**

VOLUME OF WATER TO BE PURGED: {Formula: (1)-(2)=(3); (3)x(4)=(5); (5)x(6)=(7); (7)+(8)=(9)}

(1)		(2)		(3)		(4)		(5)		(6)		(7)	(8)		(9)
115	-	**7.65**	=	**107.35**	X	**2.611**	=	**280**	X	**3**	=	**841**	**10**	=	**84.1**
Total Well Depth from TOC (feet)		Depth to water from TOC (feet)		Column of water (feet)		Volume Conversion from table (gal/ft)		Well Volume (gallons)		Number of volumes to purge		Total volume to purge (gallons)	Purge rate (gallons per minute [GPM])		Purge time (minutes)

VOLUME CONVERSION

Well Diameter__8"____

Casing Diameter	Gallons/Foot
1"	0.040
2"	0.163
4"	0.653
6"	1.469
8"	2.611
10"	4.080

FIELD PARAMETER	UNITS	INITIAL*	First	Second	10/7/2021 - Restart	10 min before FINAL	5 min before FINAL	FINAL	Stabilized (X)	Stabilization Range
Time	Military Time	1500	1530	1600	1100	1120	1125	1130		N/A
Total Purge Time	Minutes	0	30	60	60	80	85	90		N/A
Temp	°C	19.66	16.77	16.23	16.82	16.82	16.83	16.83		N/A
Cond	ms/cm	0.830	1.950	1.870	1.990	1.98	1.97	1.970		± 3%
DO	mg/L	8.13	1.04	1.27	3.71	3.72	3.77	3.77		± 10%
pH	standard units	7.92	7.85	7.72	7.68	7.66	7.67	7.67		± 0.1
ORP	mv	-161.0	-196.0	-195.0	-181.2	-183.0	-184.0	-184.0		± 10%
Turbidity	NTU	NM	NM	NM	NM	NM	NM	NM		± 10%
Salinity	%	NM	NM	NM	NM	NM	NM	NM		N/A
Description of	note color and	Clear & Colorless	Clear & Colorless	Clear & Colorless	Clear & Colorless	Clear & Colorless	Clear & Colorless	Clear & Colorless		N/A
Depth to Water	feet below TOC	7.65	26.00	36.81	7.71	41.38	41.39	41.40	N/A	N/A
Purge Rate	GPM	10	10	10	10	10	4	4	N/A	N/A
Pump Depth	feet below TOC	30	30	30	30	30	30	30	N/A	N/A

SAMPLING EQUIPMENT *(Check equipment used)*

- [X] Submersible Pump
- [ ] Peristaltic Pump
- [X] Bailer
- [X] Water Quality Meter

Make/Model: Horiba U-50

SAMPLED USING (CIRCLE) BAILER

TIME PURGE STARTED: 1505 (10/6/2021) TIME PURGE COMPLETED: 1130 (10/7/2021) TOTAL VOLUME ACTUALLY PURGED: 84 Gallons

SAMPLE COLLECTION CRITERIA *(check all that are appropriate)*

- ____ COLLECTED AFTER PARAMETERS STABILIZATION
- ☒ COLLECTED AFTER 3 WELL VOLUMES PURGED
- ____ WELL DRY - COLLECTED AFTER 2 HOURS OF RECOVERY

SAMPLE TIME: 1145

DEPTH TO WATER AT TIME OF SAMPLING: 41.40

General Notes (Including additional water level readings, purge rates, pump adjustments, etc. Use additional forms and log books as necessary.):

DUP-01 Location

Well runs dry on 10/6/2021 at 1535. We will let recharge overnight and continue to sample 10/7/2021. Sample collected 10/7/2021 at 1145.

WELL INFORMATION:

Well Type (Screened or Open Borehole): Open Borehole

Top of Screened or Open Interval (ft below TOC): 18

Bottom of Screened or Open Interval (ft below TOC): 115

Pump Depth at Start of Purge (ft below TOC):_____30_____

Pump Depth at End of Purge (ft below TOC):_____30_____

Did the water level drop below the top of screen? (CIRCLE) YES

LOGGED BY: JRD SAMPLED BY: JRD Q/A SAMPLE: DUP-01 Q/A SAMPLE TIME: 1200

Procedural Notes:

* - Initial reading taken from first water produced during purge

Final three reading to be taken within 5 minutes of each other at the end of the purge time.

If a well pumps dry, it is to be allowed to recharge for two hours and then sampled.

Final reading should reflect information at time of sampling

All times with the pump turned off for transport of IDW to the plant should be recorded

IDW Transport to Plant Times and Estimated Volumes:

1520 - Transport 250 gallons to plant for disposal. Used second truck to keep well pumping.

1600 - Transport 300 gallons to plant for disposal

Well ID: AW-4

Date: 10/6/2021 - 10/7/2021

Time Minutes from Start of Purge	Depth to Water Feet Below TOC	Purge Rate GPM	Pump Depth Feet Below TOC	Adjustments (changes in rate or pump depth; pauses due to IDW transport):
0	7.65	10	30	
30	26.00	10	30	
60	36.81	10	30	
60	7.71	10	30	
80	41.38	4	30	
85	41.39	4	30	
90	41.40	4	30	

PROJECT NAME:	**GE-LANCASTER**	WELL DESIGNATION: **RECOVERY WELL**	**SPRING 1**	DATE:	**10/7/2021**
PROJECT NO:	**103P6888**	SAMPLE DESIGNATION:	**SPRING 1**	ANALYSES:	**VOC's/ Dissolved Metals See Report**

VOLUME OF WATER TO BE PURGED: {Formula: (1)-(2)=(3); (3)x(4)=(5); (5)x(6)=(7); (7)+(8)=(9)}

(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)
	-		=		X		=		X		=		÷		=	
Total Well Depth from TOC (feet)		Depth to water from TOC (feet)		Column of water (feet)		Volume Conversion from table (gal/ft)		Well Volume (gallons)		Number of volumes to purge		Total volume to purge (gallons)		Purge rate (gallons per minute [GPM])		Purge time (minutes)

VOLUME CONVERSION

Well Diameter_____

Casing Diameter	Gallons/Foot
1"	0.040
2"	0.163
4"	0.653
6"	1.469
8"	2.611
10"	4.080

FIELD PARAMETER	UNITS	INITIAL*	First	Second		10 min before FINAL	5 min before FINAL	FINAL	Stabilized (X)	Stabilization Range
Time	Military Time	1100								N/A
Total Purge Time	Minutes	---								N/A
Temp	°C	15.21								N/A
Cond	ms/cm	1.287								± 3%
DO	mg/L	2.99								± 10%
pH	standard units	7.41								± 0.1
ORP	mv	49.2								± 10%
Turbidity	NTU	NM								± 10%
Salinity	%	NM								N/A
Description of	note color and	Clear & Colorless								N/A
Depth to Water	feet below TOC	3.98							N/A	N/A
Purge Rate	GPM								N/A	N/A
Pump Depth	feet below TOC								N/A	N/A

SAMPLING EQUIPMENT *(Check equipment used)*

- ☐ Submersible Pump
- ☐ Peristaltic Pump
- ☐ Bailer
- ☒ Water Quality Meter

Make/Model: Horiba U-50

SAMPLED USING (CIRCLE) SAMPLING PORT

TIME PURGE STARTED: TIME PURGE COMPLETED: TOTAL VOLUME ACTUALLY PURGED: Gallons

SAMPLE COLLECTION CRITERIA *(check all that are appropriate)*

____ COLLECTED AFTER PARAMETERS STABILIZATION
____ COLLECTED AFTER 3 WELL VOLUMES PURGED
____ WELL DRY - COLLECTED AFTER 2 HOURS OF RECOVERY

SAMPLE TIME: 1100

DEPTH TO WATER AT TIME OF SAMPLING: 3.98

General Notes (Including additional water level readings, purge rates, pump adjustments, etc. Use additional forms and log books as necessary.):

WELL INFORMATION:

Well Type (Screened or Open Borehole):

Top of Screened or Open Interval (ft below TOC):

Bottom of Screened or Open Interval (ft below TOC):

Pump Depth at Start of Purge (ft below TOC):_____

Pump Depth at End of Purge (ft below TOC):_____

Did the water level drop below the top of screen? (CIRCLE) YES / NO

LOGGED BY: SAMPLED BY: Q/A SAMPLE: MS/MSD Q/A SAMPLE TIME:

Procedural Notes:

* - Initial reading taken from first water produced during purge

Final three reading to be taken within 5 minutes of each other at the end of the purge time.

If a well pumps dry, it is to be allowed to recharge for two hours and then sampled.

Final reading should reflect information at time of sampling

All times with the pump turned off for transport of IDW to the plant should be recorded

IDW Transport to Plant Times and Estimated Volumes: